THE
VETERINARY JOURNAL

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Editorials

IMPORTANT REPORT UPON THE COLONIAL VETERINARY SERVICES.

In this month's issue we publish somewhat extensive extracts, which are of the deepest interest to the veterinary profession, from the Report of a Government Committee appointed by the Secretary of State for the Colonies to investigate the conditions of the Colonial Veterinary Service.

The italics are ours, and are put in with the view to doubly emphasising certain points.

The Committee was a very carefully selected one, three of the number being members of the veterinary profession, under the chairmanship of Lord Lovatt.

Lord Lovatt and his Committee thrashed out the whole matter very thoroughly, and their report is a scathing comment (unfortunately only too true, as the progressive members of the Veterinary Profession have for a long time realised) on the neglect, which has been only too well known by the members of the profession, towards not only Colonial veterinary science, but veterinary science in general, in the past.

We recommend a perusal of the whole of the report* to every member of the profession, not only those who are in the Colonial service, or who have relatives about to enter, but to every holder of the M.R.C.V.S. Diploma.

* Published by His Majesty's Stationery Office, Kingsway, London, W.C.2. Price 9d.

PEOPLE'S DISPENSARY CARAVANS AND MINERS' SICK ANIMALS ! !

MAJOR BRUNEL COHEN, M.P., writing from the House of Commons, in a letter to the *Times* for February 14th suggests that donations should be sent to the Treasurer of the P.D.S.A., 14, Clifford Street, London, N.1, for the reason that " The People's Dispensary for Sick Animals are always to the fore in every effort for the alleviation of all animal suffering, and upon receipt of the news as to the present deplorable conditions they immediately dispatched travelling caravan dispensaries to the distressed areas to do everything possible for the miners' animals."

This, to the unthinking and impulsive, warm-hearted animal lover, sounds romantic and even Quixotic, for to render real help to a sick and suffering animal is as noble a deed as to help suffering humanity, but where is the philanthropy in this instance? If the caravans carried food to starving animals their presence could be appreciated; or even if the so-called " dispensary " had a veterinary surgeon in charge, the sick animals could at least have some chance to have their ailments diagnosed, although how " treatment " could be continued until the poor sheep, or cottager's pig, or cat, or perhaps rabbit, became convalescent, with the caravan and its driver speeding from place to place (regardless of cost of petrol or other expenses), sets one a problem to solve—a problem which the real veterinary practitioner, who earns his own living without appealing for public subscriptions, would know to be impossible and absurd.

There is no doubt, as Major Brunel Cohen very aptly puts it in a further paragraph of his letter, " This practical [*sic*] care for the animals and their painless destruction when necessary, is making a very heavy demand upon the purse of the People's Dispensary for Sick Animals."

One wonders whether it has ever occurred to the kindhearted supporters of the cause of sick animals, that the animals of the poor have just as much a moral right, when ill, to have their ailments diagnosed and properly treated by qualified veterinary surgeons as the more fortunate animal of the richer owner.

It is morally wrong that it should be otherwise when veterinary help can be obtained—and there is no district in England where there is not a veterinary surgeon. To help those who cannot help themselves is a noble thing to do, but to ask the public for subscriptions to encourage the doctoring, or " so-called " treatment of poor people's animals by unqualified men is not humane; it is only because those who give do not think about the commonsense aspect of these things that they not only give willingly, but they often give twice.

General Articles

COLONIAL VETERINARY SERVICE.

Abstract from the Report of a Committee Appointed by the Secretary of State for the Colonies.

*Presented by the Secretary of State for the Colonies to Parliament by Command of His Majesty. January, 1929.**

THE Committee was appointed in July, 1927, with the following Terms of Reference :—

" To frame proposals for obtaining the highest degree of efficiency in regard to Veterinary Research and Administration in the non-self-governing Dependencies that financial considerations permit.

" The questions to be considered would embrace the recruitment and training of Veterinary Officers, their conditions of service, the organisation of Research and Intelligence, the setting up and support of any Institutions required, and methods by which the financial expenditure involved can best be met.

" In framing their recommendations the Committee should bear in mind that the principle of the ultimate creation of a Colonial Scientific and Research Service has been approved by the Colonial Office Conference, and that specific proposals for the formation of an Agricultural Scientific and Research Service for the non-self-governing Dependencies, with which the Veterinary Service must necessarily maintain close liaison, are now being framed."

The Committee consisted of The Lord Lovat, K.T., K.C.M.G., K.C.V.O., C.B., D.S.O. (*Chairman*) ; The Right Honourable W. Ormsby-Gore, M.P. ; Sir Arnold Theiler, K.C.M.G. ; Professor J. B. Buxton, M.A., F.R.C.V.S., D.V.H. ; Professor R. T. Leiper, M.D., D.Sc., F.R.S. ; Dr. W. H. Andrews, M.R.C.V.S. ; Dr. J. B. Orr, D.S.O., M.C., F.R.S.E. ; Mr. W. C. Bottomley, C.B., C.M.G., O.B.E. ; Major R. D. Furse, D.S.O. ; Major G. S. M. Hutchinson (*Secretary*).

The following witnesses gave evidence before the Committee : Professor O. Charnock Bradley, M.D., D.Sc., M.R.C.V.S., Principal, Royal (Dick) Veterinary College, Edinburgh ; Mr. F. R. Brandt, M.R.C.V.S., Chief Veterinary Officer, Nigeria ; Lieutenant-Colonel J. W. Brittlebank, C.M.G., M.R.C.V.S., D.V.S.M., President, Royal College of Veterinary Surgeons ; Dr. F. Bullock, F.C.I.S., Secretary and Registrar, Royal College of Veterinary Surgeons ; Mr. M. Crawford, M.R.C.V.S., Assistant Government Veterinary Surgeon, Ceylon ; Mr. J. A. Griffiths, F.R.C.V.S., Chief Veterinary Officer,

* The complete Report can be obtained from His Majesty's Stationery Office, Kingsway, London, W.C.2. Price 9d. net.

XUM

Nyasaland; Major F. T. G. Hobday, C.M.G., F.R.C.V.S., F.R.S.E., Principal, Royal Veterinary College, London; Mr. A. Holm, C.B.E., F.H.A.S., Director of Agriculture, Kenya; Captain H. E. Hornby, O.B.E., F.R.C.V.S., D.V.S.M., Veterinary Pathologist, Tanganyika Territory; Major H. Mason, O.B.E., M.R.C.V.S., late Director, Egyptian Government Veterinary College, Cairo; Mr. R. J. Roe, M.R.C.V.S., Veterinary Surgeon, Cyprus; Mr. J. Smith, M.R.C.V.S., D.V.H., Chief Veterinary Officer and Acting Secretary for Agriculture, Northern Rhodesia; Colonel G. K. Walker, C.I.E., O.B.E., F.R.C.V.S., Professor of Medicine, Punjab Veterinary College, Lahore; Mr. F. Ware, F.R.C.V.S., Principal of the Veterinary College, Madras; Professor Warrington Yorke, M.D., Professor of Parasitology, Liverpool School of Tropical Medicine; Professor L. R. Wilberforce, M.A., Acting Vice-Chancellor and Chairman of the Board of Veterinary Studies, University of Liverpool.

At the invitation of the Committee, representatives from Sudan and Southern Rhodesia took part in their meetings.

Introduction.*

1. *At the outset of our Report we should like to emphasise the growing importance of veterinary activities in the Colonial Empire. The successful development of public health involves problems of improved milk and meat supply. The advance of agriculture is closely associated with animal husbandry in its widest sense—the use of stock for agricultural operations, transport, manure, etc., and the growth of fodder crops. Finally, there is the economic and sociological importance of animal industries for both export production and local consumption.*

2. We cannot any longer limit veterinary activities to the mere treatment of specific diseases or even to the prevention of the spread of epizootic and enzootic diseases. The increase and improvement of domestic stock of all kinds are essentially part of modern veterinary science. Animal nutrition and animal genetics are now seen to be not only of the utmost economic importance, but also of immense significance in the prevention of disease. Modern developments in immunology have far-reaching applications in animal industry. Resistance to disease either hereditary or directly conferred by the use of vaccines or sera is a vital factor in the progress of any animal industry. *Finally, there is the fact that the advance of modern medical science—so largely the result of observations on animals—requires the continuous collaboration of veterinarians in the solution of such problems as insect-borne diseases like the trypanosomiases or the little understood*

* The italics are ours, and are made with a view to emphasising certain points and paragraphs of vital importance to the Veterinary Profession.—Editor, The Veterinary Journal.

category of virus diseases, the causal agents of which are beyond the reach of the microscope.

3. *All these considerations point to the desirability of a new outlook on the importance of the rôle to be filled by the veterinarian, and to the importance of attracting to the veterinary profession men of high scientific training and attainment. At present there is somewhat of a vicious circle. It is complained that the scientific standard of some veterinary surgeons is not as high as it should be, and, at the same time, by treating the veterinary profession as inferior to those of other scientific workers, men of high scientific training are not encouraged to enter it.*

4. From the special point of view of the Colonies it is clear that the problems of animal industry in the tropics have not yet received the same attention as they have in the temperate zones. There are vast new fields to conquer; and, while biological principles may be said to be universal, their application to the conditions of a special environment often involves such radically different emphasis of particular branches of science that the training and experience of those who have to study these different applications may require considerable modification.

5. To give examples: it is obvious that in the tropics veterinary entomology and parasitology present factors unknown to the natural experience of Europe. In the tropics the veterinarian has often to deal with breeds of stock unknown in Europe— breeds whose hereditary characteristics, whose food, and whose environment are so different from the corresponding factors within his previous experience, that he has to readjust his whole attitude. Frequently the veterinarian in the tropics is faced with an entirely different relation between man and his domestic animals from that which he knows at home. There are sociological factors, in some cases religious beliefs, which have to be studied. Further, in the application of modern science to the harnessing of tropical wealth man is faced by the fact that if in the tropics nature is more bountiful than in colder climates she also reveals more terrible powers of destruction. It is perhaps on this account that such vast areas of the tropics, naturally so prolific, are still untamed and their resources but meagrely utilised by man.

Of recent years Britain has done much for tropical medicine, tropical agriculture, and tropical forestry, but as yet but little for tropical veterinary science. It is our earnest hope that henceforward this last sphere of endeavour will receive the attention and support that its importance deserves.

6. Our Report is concerned with the non-self-governing Dependencies of the Empire which are administered under the direction of the Secretary of State for the Colonies. It therefore does not

deal directly with any self-governing Dominion or Colony. At the same time we desire to acknowledge the great assistance which we have had through the association with us of representatives of Southern Rhodesia and the Sudan, and the value of the evidence which we have received as to veterinary work in India. The Dependencies with which we are concerned include Colonies, properly so called, such as Trinidad; Protectorates such as Uganda; and mandated territories under British administration such as Tanganyika Territory. For the sake of brevity we use the term "Colony" to describe any of the territories with which we deal. These territories cover an area of some 2,000,000 square miles with a population of about 50,000,000. With the exception of 160,000 square miles, containing approximately 4,000,000 inhabitants, they lie within the tropical zone.

7. Agriculture is in almost all cases the chief source of their wealth; and agriculture, including stock-rearing, is the principal and traditional occupation of the bulk of the native inhabitants. As compared with the cultivation of crops, stock-rearing is no doubt of secondary importance in several Colonies. Its importance for its own sake is, however, very considerable. Apart from horses, pigs, etc., there are in the Colonies some 18,000,000 cattle and 17,000,000 sheep. In many large areas, such as the Northern Provinces of Nigeria, stock-rearing is one of the principal industries; in nearly all, however, it is of increasing significance that the pastoral industry fails to reach its proper development by rendering stock-rearing an economic proposition.

8. These considerations alone would justify the provision of adequate measures for combating animal diseases and improving the health and nutrition of the flocks and herds. It must be remembered that the Colonies have not, as we have in Europe, the advantages derived from a long period of scientific control backed by statutory regulations. A large number of animal diseases are endemic in the Colonies—particularly in Africa—and the introduction of new conditions with the progress of civilisation almost invariably brings fresh problems and difficulties in its train. Between 1911 and 1925 the cattle population of Nigeria was reduced by as much as 25 per cent. almost entirely through rinderpest. This same disease, in two outbreaks, destroyed 5,000,000 head of cattle in South Africa south of the Zambesi, representing a loss of £20,000,000.

9. The importance of the problem of animal health in the Colonies is, however, by no means confined to the stock industry. Diseases of animals and animal-borne diseases may have a widespread and sometimes disastrous effect on the welfare of the com-

munity at large. Agriculture is affected by lack of animals for tillage and transport, and the evil effects of an absence of stock upon methods of cultivation and manuring must be recognised. Many other industries are affected by the ravages of disease among transport animals. In large areas of Northern Rhodesia, for example, human porterage is the only means of transport. Huge districts in Tanganyika have been made unsafe for man or stock by the tse-tse fly, which is now spreading in Nyasaland. In some Colonies the shortage of local supplies of fresh milk and meat is a source of difficulty in the adequate progress of public health. To take an example of a different kind, the aid of veterinary science is needed in attacking the problem of human trypanosomiasis. This disease was responsible for the destruction of one-tenth of the human population of Uganda in 1902 and 1903. These examples, taken at random, may serve to show how serious and far-reaching a menace is presented by the various animal diseases and how important it is to the welfare of the Colonies that their veterinary services should be numerically adequate to their task; staffed with a personnel of high quality; furnished with full and up-to-date information on all matters that concern their work; and well organised and equipped in respect of research.

10. *We regret to have to report that this ideal is very far from being realised. On the contrary, there is evidence that this important problem has in general been seriously neglected. In many Colonies the Veterinary Department appears to be regarded much in the light of a "Cinderella" among the other branches of the service. This attitude is not confined to the Colonies. It is significant of the general status of Veterinary Services that, in* 1912, *when the Government of India contemplated the abolition of six Inspector-generalships of Departments, it was the Veterinary Department alone which, when the dust of controversy had subsided, found itself left without a head.*

11. The Veterinary Departments of the Colonies are in our opinion generally understaffed. The aggregate strength of the Colonial Veterinary Departments only amounts to 127 qualified officers; that is to say, one officer to every 16,000 square miles, 400,000 inhabitants, or 280,000 head of cattle and sheep. *We consider that the number of specialist and research officers (at present* 15*) is absurdly small for the many problems which require investigation and for the variety of diseases with which they have to deal. We wish to take an early opportunity of paying a high tribute to the admirable work which has been accomplished, often in the face of great difficulties and much discouragement.*

12. We are satisfied that the general standard of entrance into the Service has been too low in more than one respect. Difficulty

is frequently experienced in obtaining recruits who combine with technical proficiency those personal qualities which are essential if the veterinary officer is to enforce his often unpalatable regulations without undue friction. The Service, too, does not sufficiently attract the man with a scientific bent, and there is a serious shortage of men trained for research work. There is no provision for suitable post-graduate training for officers entering the Service, and—in contrast to their colleagues in the Colonial Medical Services—they even lack the advantage of a preliminary course in tropical veterinary science.

13. We have been impressed by three outstanding defects in the existing organisation of the Colonial Veterinary Services :—

1. There is no advisory authority to the Secretary of State for the Colonies on matters affecting the larger aspects of veterinary research in the Colonies or on questions concerning the personnel of Veterinary Departments and research stations.

2. There is no research station which is charged with the duty of taking a view wider than that of the immediate needs of a particular Colony.

3. There is no adequate system for collecting, editing, and distributing information such as would enable individual officers to keep abreast of the progress of knowledge in their own subjects.

14. The causes of the present unsatisfactory state of affairs may be conveniently grouped under two heads. There are those for which the Colonial Governments concerned are directly responsible and for which the remedy lies in their own hands. Others are due to defects in the training of veterinary officers and to defects in the headquarters' organisation.

To take the first of these groups, the principal causes of trouble appear to be that, with certain notable exceptions, the problem of animal health and nutrition has not been attacked in a sufficiently comprehensive manner and insufficient funds have been provided. At the same time, the personnel of individual Veterinary Departments has not always been such as to command the full confidence of their local government. These governments, therefore, who are, of course, composed mainly or entirely of laymen, feeling uncertain of the quality of the advice given by their local experts and having no central authoritative body to whom they could subject it for confirmation or criticism, have been unwilling to find the money to tackle the problem. We recognise that up till now there has been no inter-colonial organisation whose duty it should have been to examine veterinary problems as they may affect groups of Colonies or the Colonial Empire as a whole, to make suggestions for improvement,

XUM

and to place at the disposal of individual governments the results of experience gained in other Colonies or in the world at large.

15. *In the body of our Report we make suggestions both for improving the standard of recruitment for the Veterinary Departments and for setting up a new Central Organisation. On the former point we are convinced that the Colonies must make their Veterinary Services more attractive before they can expect to recruit sufficient men of the right stamp. In particular, it will be necessary to offer higher salaries in the senior grades. The status and prestige of Veterinary Departments must be improved. Better provision should also be made for supervision of the work of individual officers and assisting them by giving facilities for study leave; for the recognition and reward of merit, and for the promotion and transfer of deserving officers. All this will mean money, and critics may well ask for proof that the trouble and expenditure involved will be worth while. We cannot do better than refer them to the notable example which has been given by the Union of South Africa.*

16. South Africa formerly had an evil and well-deserved reputation for animal disease. Not only was the country ravaged by diseases peculiar to warm climates, or to Africa, but also many of the most serious diseases of the temperate zone had become established there. The actual mortality was always considerable, often very serious, and at times ruinous, and over a large part of the country stock-raising was always an uncertain and speculative industry. In many areas only certain inferior breeds which were disease-resistant could be kept, since the breeding or keeping of many classes of farm stock was impossible. It may be remarked that large areas in our tropical Colonies are in a similar position to-day.

To deal with so serious a situation the South African Government (or, in the first place, the several Colonial Governments of South Africa) built up a large and comparatively well-paid administrative and executive veterinary staff. The most striking and significant feature of their campaign against animal disease was, however, the great encouragement of the research side. The research staff was, as compared with research staffs in most veterinary services, exceptionally large and well-organised, with attractive conditions of service. The central veterinary research laboratory at Onderstepoort was, as it is to-day, the largest institution of its kind in the world. The Veterinary Research Division manufactures vaccines and sera, and in recent years has also undertaken the professional side of veterinary education in South Africa. The annual expenditure on this Division, excluding the Veterinary Division (which deals with administration and field control), has been as high as £120,000, and now averages about £100,000.

XUM

The results attained have amply justified the heavy expenditure. The most destructive diseases have been brought under control, and many have been completely eradicated. Stock is now freely introduced into areas which were formerly practically uninhabitable, at least for animals of the more desirable breeds. The change in the number and distribution of domestic animals in South Africa is most gratifying, but probably the best proof of the success attained is to be found in the remarkable improvement in the type of animals kept, and in the confidence with which farmers, living in areas once notoriously unhealthy, now purchase breeding stock of high value.

17. But whatever reforms the Colonial Governments may make in the organisation, equipment, and conditions of their Veterinary Services, we do not believe that satisfactory progress can be achieved unless the conditions under which veterinary officers are trained in this country can be fundamentally improved. As we show later in our Report, there is in the United Kingdom only one portal of entry to the veterinary profession, namely, the possession of the diploma of membership of the Royal College of Veterinary Surgeons. The ordinary training laid down for students taking this diploma is not, in our opinion, sufficient for officers of the Colonial Veterinary Services. These officers are called upon to treat animals in the mass, and to deal not only with the greater variety of diseases than are prevalent at home, but also with questions concerning the improvement of breeds and nutrition. We consider it essential that they should have a more thorough grounding in general science and that they should be given a sound working knowledge of animal genetics and nutrition. Further, although the need of post-graduate training of several kinds is widely recognised, there is at present no veterinary institution in the United Kingdom which can provide the necessary facilities and staff. Nor is there in Great Britain any provision for definite training in tropical veterinary science. Veterinary officers who enter the Colonial Services usually do so without having received any post-graduate training and in our opinion are insufficiently equipped for the work which lies before them.

18. But the trouble goes deeper than this. It is not merely a question of curriculum, but of the conditions under which the training is given. In our opinion these conditions are profoundly unsatisfactory. The main cause is lack of funds. The first veterinary school was founded in 1791 and from the beginning has been handicapped in this respect. The other schools which have been formed later have all suffered from the same defect. As a consequence it has not been possible to offer sufficient inducements to attract enough qualified teachers. Most of the existing staffs appear to instruct in too many

XUM

subjects and the accommodation and equipment at their disposal are often lamentably inadequate.

19. In order to check the disturbing evidence which we received on such points as these, we visited the Royal Veterinary College at Camden Town, by invitation of the Principal. We do not hesitate to say that we were dismayed by what we saw. While we were much impressed by the efforts which the Principal and his staff are now making under adverse conditions, we could not but receive a general impression of starvation and neglect. We noticed that the walls in many of the buildings were dangerously cracked and propped up by struts for the sake of safety. The students in the laboratories were so cramped that efficient work on their part seemed impossible. We were told that hot water was not laid on throughout the building and we noted that telephones and electric light were only then in process of being installed. What a contrast to the order and cleanliness and the wealth of modern resources and equipment which are so obvious in any of the medical schools attached to the great hospitals! It is nothing short of a national disgrace that such a condition of affairs should be allowed to continue. The blame, we think, does not lie with the teaching staff, labouring as they do under the great disadvantage of inadequate salaries in a school which is both inadequately staffed and equipped. On the contrary, they have made great personal sacrifices, and have themselves provided much of the existing equipment.

20. As in the Colonial Veterinary Departments, the root of the trouble is lack of funds and a certain apathy and lack of vision. Veterinary schools in this country receive but little help from the State and have to rely mainly on students' fees. When we compare the large veterinary institutions in other countries, supported principally by State funds, with those that exist in Great Britain, the contrast is somewhat depressing. We have already referred to the large annual appropriation from Government funds in the Union of South Africa: in Germany the Veterinary College of Berlin receives an annual grant from the State of the value of £28,000. Starved as they are of financial support and cramped and confined in their activities, it is clearly impossible for the veterinary schools to give a training of the scope and quality needed. The profession must needs suffer in efficiency and prestige, and consequently in the attraction it offers as a career to the youth of the country.

21. We have found it necessary to speak strongly on this matter, because the general policy in force seems to be one of drift, and new schemes are framed merely according to available funds and not on any comprehensive plan based on a true appreciation of what is

XUM

needed. We are convinced that the problem of animal health is so important that the existing conditions both in the training institutions at home and in the Veterinary Departments of the Colonies should no longer be tolerated. In both a new policy is needed, framed on bold and comprehensive lines, supported by adequate funds, and carried through with energy and determination.

The Objective to be aimed at.

32. We propose here to set out in general terms the standard of proficiency which, in our opinion, a Colonial veterinary officer should have attained at the time of assuming his appointment.

It is imperative that he should have had a thorough grounding in science, and a good all-round scientific training, so that he may apply its principles in the solution of problems of animal disease. He should also have a sound working knowledge of animal genetics and of animal nutrition and have attended a post-graduate course of instruction in tropical veterinary science. We are satisfied that this country does not provide the training which we consider necessary. A candidate who passes one of the approved examinations before commencing his professional studies at a veterinary school need not have included any scientific subject ; so that his first acquaintance with science may be during his first year at a veterinary school.* Animal genetics and animal nutrition are but lightly touched on in the existing courses.

33. The Council of the Royal College of Veterinary Surgeons is not prepared to alter the approved syllabus of the membership course to meet the special requirements of the small numbers entering the Colonial Veterinary Services, though we understand that the lengthening of the membership course is at present under consideration. In our opinion, however, the chief deficiencies in veterinary education in Great Britain are undoubtedly connected with the facilities for teaching at most of the veterinary schools to which we have already referred. We fail to see how it is possible for students to benefit to the fullest extent from the instruction they receive, if veterinary schools are unable to supply adequate teaching staff, equipment and accommodation.

34. We find ourselves, therefore, faced with the following serious problems in regard to recruitment and training :—

(*a*) That a sufficient number of men of the right personal type are not forthcoming.

* Many witnesses emphasised that, in order to avoid the cramming in pure science which is usually necessary during an undergraduate's first year at a veterinary school, there should be a pre-registration course in science which would lengthen the syllabus by one year.

XUM

(*b*) That the best brains are not being encouraged to enter the Services.

(*c*) That a sufficient training in general science is lacking.

(*d*) That the syllabus course of Membership of the Royal College of Veterinary Surgeons does not entirely meet the requirements of officers of the Colonial Veterinary Services.

In considering how a radical improvement might be effected, we have naturally concentrated mainly on the more immediate aspect of the problem : that is to say, on how the numbers of suitable recruits can be increased and how the best training can be provided for them.

35. Our recommendations for the solution of this problem are as follows :—

RECRUITMENT.

(1) The raising of the status and conditions of service of Colonial Veterinary Departments.

(2) The stimulation of public interest in a Service offering opportunities for the investigation of problems of scientific interest and the exercise of responsibilities which are greater than those usually shouldered by young men.

(3) A closer liaison with schools, university appointments boards, and veterinary colleges, so that the special requirements of the Colonial Veterinary Services may be made known to parents and students.

TRAINING.

(1) Holders of a degree in pure science or the equivalent of Part I of the Cambridge Natural Sciences Tripos to be encouraged to enter the Colonial Veterinary Services.

(2) Students studying for the Diploma of Membership of the Royal College of Veterinary Surgeons to be encouraged to take concurrently with it the B.V.Sc. or B.Sc.

(3) All newly-appointed officers to undergo in this country a course of instruction in tropical veterinary science, before proceeding overseas.

Part II.—Scheme for the Provision of Scholarships.

36. We are convinced that, if the recommendations in our Report are accepted, the Colonial Veterinary Service will in due course be recognised as a first-class Service attractive to the young man of scientific bent. As a provisional measure for the increase of the number of suitable recruits and the improvement in their training, we recommend that a system of scholarships should be instituted. We must emphasise, however, the temporary nature of such an expedient. We feel that the Colonial Veterinary Service

must in the long run rely for recruits on its intrinsic attractions. Special inducements offered at an early stage to tempt young men into a profession cannot make up for inherent deficiencies in the prospects which that profession can provide in salary, status and opportunities.

We put forward a scheme for the grant of an annual number of scholarships not exceeding 10 in any one year, subject to suitable candidates presenting themselves. The scheme is designed to meet the principal difficulties with which we are faced at present. The advantages which it provides are as follows :—

(*a*) It gives material assistance towards the cost of education of men who have taken a degree in pure science, and encourages them to enter the Colonial Veterinary Services ; and

(*b*) It should ensure a steadier flow of candidates.

Types of Scholarships Proposed.

37. The object of the proposed scholarship scheme is to provide the Colonial Veterinary Services in the immediate future with a supply of candidates of the best personal type who have undergone a first-class scientific training. We are convinced that this object can best be attained by the following methods :—

(1) By attracting to veterinary work men who have already received the highest training in general science at a university, and have shown a bent for scientific work.

(2) By encouraging men who have already embarked on a veterinary training, and have shown aptitude for the work, to develop further the scientific side of their education.

We therefore recommend the following types of scholarships :—

(*a*) Candidates holding a degree in pure science.—£250 a year for three years while qualifying for the Diploma of Membership of the Royal College of Veterinary Surgeons.

(*b*) Candidates holding the Diploma of Membership of the Royal College of Veterinary Surgeons, and the degree of B.Sc. or B.V.Sc.—£250 a year for two years in order to take a further degree or to undertake research under the supervision of an approved teacher or at an approved institution.

(*c*) Candidates who hold the Diploma of Membership of the Royal College of Veterinary Surgeons.—£250 a year for two years in order to complete a degree in some special biological subject.

Part III.—Post-Graduate Instruction in Tropical Veterinary Science.

42. Medical officers appointed to the Colonial Medical Services are normally required to take a special course of study at the London

School of Hygiene and Tropical Medicine, the Liverpool School of Tropical Medicine, or the University of Edinburgh, before taking up their appointments abroad. Instruction is given in branches of tropical medicine and hygiene, and in parasitology as applicable to public health work in this country. An officer's final selection for appointment is dependent upon the Secretary of State receiving a satisfactory report on his work and progress during the special courses of instruction.

As yet no provision is made in this country for post-graduate courses in tropical veterinary science, though we understand that the University of Liverpool contemplates the establishment of a course in veterinary hygiene which would include a certain amount of tropical veterinary medicine. The French Government, realising the importance of the teaching and study of tropical veterinary science, have instituted a four months' course obligatory for all veterinary officers desirous of working in Algeria and the French Colonies and Protectorates. At Buitenzorg, Java, in the Dutch East Indies, there is a well-equipped veterinary college in which tropical veterinary science is studied, and the problems arising from animal diseases in the tropics are seen and taught in their true environment.

43. At present the newly-appointed Colonial Veterinary Officer arrives in a British Colony with an inadequate knowledge of animal diseases peculiar to the tropics, and their treatment and prevention. We fail to see how he can be of any real practical value to his Service until he has had some specific instruction in those animal diseases which are to be met with in the Colonies. We feel strongly that without such instruction he is handicapped from the commencement of his career, and that unless he has a keen scientific interest he runs the risk of never properly mastering the first principles of tropical veterinary science. In our opinion a newly-appointed officer should not assume his normal duties in the field until he has familiarised himself with his future work by means of the following supplementary training :—

1. (*a*) Comprehensive courses in protozoology, entomology, and helminthology.
   (*b*) More advanced work in pathology, bacteriology, and biochemistry.
   (*c*) Courses in animal nutrition, animal genetics, tropical hygiene, and tropical agriculture.
   (*d*) The application of these sciences to specific problems of animal disease and epizootiology.
2. Training, chiefly practical, at a laboratory in which tropical

diseases of animals can be seen under circumstances approximating more nearly to normal conditions.

44. The special courses referred to under (1) could most easily and economically be arranged in Great Britain. But the second and practical portion of the training could be satisfactorily given only in a tropical country. It would be of undoubted advantage if all newly-appointed officers could receive clinical instruction at some well-equipped centre abroad, in order to complete their initial training before assuming their normal duties. We fear that this is impossible in view of the vast extent of the Colonial Empire. We recommend, however, that if the Colony to which an officer is posted has a veterinary laboratory he should receive a course of instruction of about three months' duration before proceeding to his up-country station. Where no veterinary laboratory exists, he should if possible be sent for such training to a neighbouring Colony possessing the necessary facilities.

School of Tropical Veterinary Science.

45. We are of opinion that there is no institution in this country which at present offers the facilities which we deem to be necessary for the special requirements of the Colonial Veterinary Services. We therefore recommend that a School of Tropical Veterinary Science should be established, modelled on the lines of the London School of Tropical Medicine.

Situation.

46. We do not make any definite recommendations regarding the actual site of the School of Tropical Veterinary Science which we propose, *but in our opinion two important principles must govern its establishment* :—

1. *It should be closely linked with a veterinary college.*
2. *It should be affiliated to a university so as to be eligible for a grant from the University Grants Committee.*

We understand that suitable accommodation might be made available either at the Research Institute of the Royal Veterinary College, Camden Town, London, or in the premises of the Seamen's Hospital, Endsleigh Gardens, London, formerly occupied by the London School of Tropical Medicine. If these two principles are accepted, we see no reason why the proposed school should not be established at either of these places ; and we urge the importance of an early decision being taken so as to secure the lease of one of these sites.

47. To obtain the necessary status for recognition as a school of a university, the new School of Tropical Veterinary Science must be properly organised in the arrangement of its departments and be

staffed by men whose ability to teach their particular subjects is unquestionable.

The curriculum of the school should provide :—

(*a*) A post-graduate course in tropical veterinary science of about six months' duration for all newly-appointed Colonial veterinary officers, whose final selection for appointment would depend upon the Secretary of State for the Colonies obtaining a satisfactory report on their work and progress.

(*b*) Refresher courses for Colonial veterinary officers on leave.

(*c*) Facilities for research.

We have explored the feasibility of the post-graduate and study-leave courses being undertaken at different periods of the year, so that the teaching staff may be utilised in the most economical way. We understand that students from the veterinary schools graduate annually in July, and we therefore propose that the ordinary post-graduate courses should commence annually in October and terminate in March. The four months—April to July—could then be devoted to the proposed refresher courses.

STAFF AND DEPARTMENTS.

48. We recommend—

1. That the following establishment should be regarded as a minimum for the new School of Tropical Veterinary Science :
   Permanent Staff : Director, Three Senior Officers.
   Temporary Staff (*part-time*) *:* Demonstrators.
   Visiting Staff : Lecturers.
2. That the School should be divided into the following three main departments :—
   (1) Bacteriology and Pathology ; (2) Parasitology, including Entomology ; (3) Physiology and Nutrition ; each under a senior whole-time officer.

49. The Director should be the administrative head of the School, concerned primarily with its organisation and development. It would be desirable that his teaching duties should be confined to lectures on veterinary hygiene, and to clinical demonstrations in not more than one major subject. But we fear that the minimum staff with which it is proposed to furnish him would necessitate his taking, at any rate at first, a more active part in teaching in the School. We therefore suggest that until an expansion of staff is possible he should give special instruction in the application of bacteriology, parasitology, and entomology to tropical veterinary science. By so doing he would keep in close touch with the methods of instruction in the three departments and at the same time watch the progress of individual students.

50. It is essential that the School should be kept in the closest

possible touch with the Central Research Station, whose establishment we recommend in Part V of our Report. It will be appreciated that many of the problems with which both these new institutions will be faced may be identical and in any case closely allied. In our opinion the necessary co-operation could best be effected by a periodic interchange of staff. We see no reason why such a liaison between the two institutions should not be established and work smoothly and beneficially.

51. The Imperial Agricultural Research Conference, 1927, recommended in their Report* the establishment of a Bureau of Animal Health in London as a clearing-house of information on veterinary science throughout the British Empire. It is essential that the School should be in close proximity and touch with this Bureau when established, and in our opinion this could best be achieved if the Director of the School were a member of the technical advisory council of the Bureau of Animal Health.

SALARIES.

52. We recommend that the salaries of the permanent staff should be as follows :—

	£	£
Director	1,250	1,250
Three Senior Officers ..	1,000	3,000
Total		£4,250

We estimate that the annual expenditure in connection with the salaries of temporary and visiting staff should not exceed £2,000.

FINANCE.

53. We estimate that the capital outlay necessary for the conversion of an existing institution into a School of Tropical Veterinary Science will be about £3,000 to £5,000 and that the current expenditure including salaries, rent, maintenance, etc., will be about £12,000 per annum.

Part IV.—Headquarters Organisation.

55. There is at present no advisory authority to the Secretary of State for the Colonies on veterinary matters, as there is on legal, medical, and, we understand, there will shortly be on agricultural matters. Questions affecting the personnel, organisation, and policy of Colonial Veterinary Departments are therefore dealt with without the advice or assistance of any technically qualified officer.

This is a most unsatisfactory situation and we consider that it should be remedied forthwith. We suggest that the following measures should be taken :—

* Non-Parliamentary Publication, March, 1928, pages 32 and 33.

A.—An Adviser on Animal Health to the Secretary of State for the Colonies should be appointed.

B.—A consultative Committee of Animal Health, representing the various branches of veterinary science, should be established.

C.—When the Agricultural Committee proposed by the Colonial Agricultural Service Organisation Committee is set up, a joint body representative of both Agricultural and Veterinary interests should be established (the Colonial Advisory Council of Agriculture and Animal Health) to ensure that questions of policy and research affecting both spheres of scientific action are properly co-ordinated.

A.—Adviser on Animal Health.

56. The Adviser on Animal Health should be a distinguished veterinarian possessed of organising capacity and familiar with conditions existing in the Colonial Empire.

The duties attaching to this post should be more particularly as follows :—

(1) To advise the Secretary of State generally on all veterinary matters in the Colonies. (For this purpose he should have access to all necessary departmental documents, etc.)

(2) To ensure, so far as is possible, continuity of policy, co-ordination of action between different administrations, and the introduction of new ideas in the work of the Colonial Veterinary Services.

(3) To maintain a personal liaison and co-operation with other Government Departments in the United Kingdom and with other bodies in relation to veterinary work in the Colonies, to keep in touch with the Council of the Royal College of Veterinary Surgeons, with the veterinary schools in the United Kingdom, and with the proposed School of Tropical Veterinary Science.

(4) To officiate as Deputy Chairman of the Committee of Animal Health and to be a member of the Colonial Advisory Council of Agriculture and Animal Health.

(5) To advise the Secretary of State on all questions relating to the personnel of the Colonial Veterinary Services.

(6) To assist the Private Secretary (Appointments) in the interviewing of candidates who are under consideration in connection with vacancies in the Colonial Service and to supervise the working of the Scholarship Scheme referred to in Part II of our Report.

(7) To advise on all changes in the regulations for, and conditions of the employment of Colonial Veterinary Officers.

XUM

(8) To keep in close touch with the activities of Veterinary Departments by means of periodical visits to the Colonies.

It is our intention that the post should be of an advisory character with no direct executive functions and should in no way affect the responsibility of a Governor or Head of a Veterinary Department in regard to the administration of veterinary matters in any particular Colony.

SALARY AND STAFF OF THE ADVISER ON ANIMAL HEALTH.

57. We recommend that the salary of the Adviser on Animal Health should be £1,500 per annum and that, as in the case of the Chief Medical Adviser, this sum should be borne by the Exchequer. As regards personal staff, we recommend that, as a temporary measure, he should have a call on the services of the Principal seconded from the Colonial Office, whose appointment was recommended by the Colonial Agricultural Service Organisation Committee.* Shorthand writers should be available for his use from the Colonial Office pool.

B.—Constitution of the Committee of Animal Health.

58. We recommend that the Committee of Animal Health should be composed as follows :—

The lay Chairman of the Colonial Advisory Council of Agriculture and Animal Health, referred to in paragraph 60 of our Report.

The Adviser on Animal Health (Deputy-Chairman), the Chief Agricultural Adviser, a representative of the permanent staff of the Colonial Office, a Bio-Chemist, an Economic Botanist, an Entomologist, a Parasitologist, a Protozoologist, an Animal Pathologist, a Specialist in Animal Nutrition, an Animal Geneticist, an Epizootiologist.

FUNCTIONS OF THE COMMITTEE OF ANIMAL HEALTH.

59. We recommend that the functions of the Committee should be to advise on the following matters :—

(1) The main veterinary research policy of the Colonial Empire.
(2) The supply of specialist and field officers for the Colonial Veterinary Services, in conjunction with the recruiting authorities of the Colonial Office.
(3) The arrangements for training, including the working of the scholarship scheme, and for post-graduate training and study leave.
(4) The efficiency and general well-being of the unified Colonial Veterinary Service, the creation of which we recommend in Part VII of our Report, including such advice upon the

* Cmd. 3049, paragraph 18.

Veterinary Services as the Secretary of State or Colonial Governments may desire.

(5) The establishment of the Central Research Station which we recommend in Part V of our Report, and the general guidance of its work.

(6) The collection, collation, and distribution of veterinary information in fields not covered by other agencies.

(7) The representation of the Colonial Empire as a unit in Imperial schemes of research and in Imperial Bureaux and Correspondence Centres.

This definition must, however, be regarded as only tentative since an exact appreciation of actual requirements can only be evolved by experience.

C.—Colonial Advisory Council of Agriculture and Animal Health.

60. In view of the close inter-dependence of animal health and agriculture, we took the opportunity of discussing with the Colonial Agricultural Service Organisation Committee the steps which should be taken to secure the necessary co-operation between the two Services and to ensure that the whole field of veterinary and agricultural activities is covered and that no gaps are left between the fields of activity which are at present the concern of two separate Departments in most Colonies.

We were informed that the Colonial Agricultural Service Organisation Committee proposed to recommend the establishment of a Colonial Agricultural Council. Many of its members would be the same as those of the Committee of Animal Health. We discussed with the Colonial Agricultural Service Organisation Committee the question of the formation of a single Joint Council to advise on questions of common interest to veterinary science and agriculture. We were unanimous in agreeing that a Joint Council would be in the best interests of both, and recommend that a Colonial Advisory Council of Agriculture and Animal Health should be established and that it should be composed of the following members :—

Chairman (who should be a Layman), the Chief Agricultural Adviser to the Secretary of State, the Adviser on Animal Health, the Assistant Agricultural Adviser, the Chief Medical Adviser to the Secretary of State for the Colonies, a representative of the permanent staff of the Colonial Office, the Director of the Imperial Institute, an Agriculturalist with tropical experience, a Botanist, an Entomologist, a Mycologist, an Animal Geneticist, a Specialist in Animal Nutrition, a Chemist, primarily for soil science, an Epizootiologist.

XUM

It will be seen that the members of the Committee of Animal Health will for the most part be members also of the Council. We anticipate that in practice this Joint Council will not find it necessary to meet very often and that the main work will fall upon the Committee of Animal Health, and upon the Agricultural Committee respectively.

ACCOMMODATION.

61. We have considered the question of accommodation for the Joint Council and for the Committee of Animal Health and are of opinion that it would be preferable if both could be housed in the Colonial Office. We understand, however, that owing to the congestion in that Office this is impracticable. We suggest that if the Office of the Bureau of Animal Health, to which we have referred in Part III, paragraph 51, of our Report, is established in London, as was recommended by the Imperial Agricultural Research Conference, 1927.* the Committee of Animal Health should if possible be given accommodation in the Office of the Bureau. We agree with the recommendation of the Colonial Agricultural Service Organisation Committee that the Colonial Advisory Council of Agriculture and Animal Health should sit at the Imperial Institute.

62. We are convinced that it is essential that the Adviser on Animal Health should be accommodated in the Colonial Office, as we consider it of the utmost importance that he should establish close personal relations with the staff of the Colonial Office and be readily accessible for consultation in that office. Equally important is the maintenance of close relationship between the authorities at home and the officers serving in the Colonial Empire, and in this connection we fully endorse the views expressed by the Committee on Agricultural Research and Administration in the Non-Self-Governing Dependencies in paragraph 112 of their Report† and by the Committee of the Colonial Office Conference, 1927, in paragraph 26 of their Report‡, to the effect that not only should the Adviser and other members of the Council acquire as much knowledge as possible both of individual officers in the Colonies and of the conditions under which the latter have to work, but also governors, chief veterinary officers, and other senior officers should be brought into touch with the Council and Committee when on leave in this country, and should be invited to attend their meetings and to take part in the discussions.

Part V.—Organization of Research.

63. We are impressed by the valuable research work which is being performed by officers in the Colonial Veterinary Departments. We are unable, however, to find any co-ordinate plan of action against

* Non-Parliamentary Publication, March, 1928.
† Cmd. 2825, page 48.
‡ Cmd. 2883, page 32.

animal diseases. It appears to us that there is much duplication of research and that the individual results of a worker in one Colony are not necessarily known to his colleagues working on the same problem in other territories. Specialist officers, whose numbers we consider very small in proportion to the need, are required to devote an inordinate amount of their time to the preparation of sera and vaccines and other routine duties.

It is clear that in most of the larger Colonies there is great need for augmentation of research staff and for the provision of funds adequate to the work required. We stress the importance of salaries of the higher research posts being such that the ambitious and able research worker will not be tempted for financial reasons to transfer to the administrative side, and consequently to undertake duties of which he has probably little experience, and for which he may possess little aptitude. On the other hand, the division between the two branches of the Service should not be rigid and transfers from one side to the other, when prompted by the consideration of an officer's taste and aptitude, should be encouraged in the interests of efficiency.

Whilst we strongly recommend the strengthening and extension of local research organizations, we feel that something more than this is needed. It is in the highest degree desirable that the work of such organizations should be co-ordinated so far as possible, but each local organization must necessarily attempt first to meet the most urgent needs of the particular Colony in which it is situated. In most cases the local Service is unlikely to include specialists in all the main branches of veterinary science. It has to be remembered that some problems are of considerable importance to many different Colonies and some even to the whole Colonial Empire. In many cases these problems present aspects which obviously call for prolonged and intensive study, whilst they may be of such a nature as to demand the combined efforts of a number of specialists in different branches. Such problems are likely to receive adequate attention only in a large and well-organized institution which is to some extent independent of urgent local calls on its time and attention.

We are in entire agreement with the recommendations of the Imperial Agricultural Research Conference*, who laid down that Central research stations "should, in the main, confine themselves to 'long range' and 'wide range' research, i.e. that they should concentrate on—

"(*a*) problems requiring more prolonged research work than could normally be expected from the technical staff of any single administrative department;

* Non-Parliamentary Publication, March, 1928, page 9.

" (*b*) problems arising in more than one territory of the Empire, towards the solution of which the comparative method may be expected to make an effective contribution."

Establishment of a Central Research Station.

64. We recommend that a central research station should be established in the tropics, preferably in East Africa, as the pivot organization for veterinary research in the Colonial Empire. We consider it important that the central research station should not be unduly affected by local administrative considerations. In this connection we wish to lay stress on the importance of the closest touch being maintained between the central research station and the ordinary veterinary activities including veterinary research of the Colony in which it is situated. The work of this station should be regarded as a reinforcement to that of the local Veterinary Department and in no sense as the substitute for it.

STAFFING OF CENTRAL RESEARCH STATION.

66. We consider that the following establishment should be regarded as a minimum for the central research station :—

Director, three senior research officers, four junior research officers, secretary-librarian, recorder, farm manager, accountant storekeeper, four laboratory assistants, engineer mechanic.

We have made no provision for the appointment of a deputy director. If funds permitted, such an appointment would be desirable, but in the meantime we recommend that one of the senior research officers should be at the same time deputy director.

67. We recommend that the station should be divided into three main departments :—

(1) *Pathology*, including morbid anatomy, bacteriology, immunology.
(2) *Physiology*, including nutrition, biochemistry, toxicology.
(3) *Parasitology*, including mycology, protozoology, entomology, helminthology.

A senior research officer should be in charge of each department, assisted by a junior officer who should understudy him in the event of absence. We contemplate that the director and other officers should travel when necessary in order to keep the central research station in close touch with important investigations elsewhere and with veterinary activities.

Salaries.

68. In framing our recommendations for the salaries of the officers of the central research station, we have adopted the scales proposed for the unified Colonial Veterinary Service, the creation

of which we recommend in Part VII of our Report.* For present purposes we have placed the director in Class II, one senior Officer in Class IV and two in Class V, and the four junior officers in Class VI, and in each case we have based our estimate on the mean of the scale.

We recommend that the salaries should accordingly be as follows :—

	£	£
Director, Class II	1,500-50-2,000	1,750†
1 Senior Officer, Class IV ..	1,200-50-1,350	1,275†
2 Senior Officers, Class V ..	1,000-50-1,200	2,200†
4 Junior Officers, Class VI ..	750-50-1,000	3,500†
Total		£8,725

As regards the other officers whose appointments we have recommended, we suggest that the following scales of salaries should be sufficient to attract officers of the qualifications desired :—

	£
Secretary-Librarian	700-30-900
Recorder	450-25-600
Laboratory Assistants	480-20-600
Farm Manager	500-25-750
Accountant Storekeeper	350-15-400
Engineer Mechanic	400

RELATIONS WITH COLONIAL VETERINARY DEPARTMENTS.

89. We have already referred to the need of securing close co-operation between the central research station and the Veterinary Departments, and the visits which we have suggested should be paid to Colonies by the director and other officers of the station will assist in maintaining close personal relations. We see no reason to anticipate that any serious difficulty will, in fact, arise, but we have carefully considered whether any rules should be laid down to govern the relations between the central research station and the Veterinary Departments. We have come to the conclusion that the rules which were suggested in paragraph 95 of the Report‡ of the Committee on Agricultural Research and Administration in the Non-Self-Governing Dependencies might be modified for the Veterinary Service to read as follows :—

" (1) An officer from the central station should not proceed with any outside investigation without information of his intention being given, in advance of his visit, to the Governor of the territory concerned.

" (2) If the Governor, after obtaining the views of the chief veterinary officer, informs the director of the central

* Page 37. † Mean of the Scale. ‡ Cmd. 2825, page 42.

XUM

research station of any objection to the proposed investigation, the matter should be referred to the Council in London before any decision is taken.

"(3) An officer despatched for the investigation in a particular territory of a subject which directly concerns the Veterinary Department should, where possible, be placed under the executive control of the chief veterinary officer."

FINANCE.

70. We are unable to estimate the capital outlay necessary for the establishment of the new central research station. We understand that the cost of developing the Veterinary Institute at Kabete, Kenya Colony, involved a capital expenditure of about £45,000 and that its recurrent expenditure amounts to about £30,000 per annum. We anticipate that the new central research station will not be represented in its earlier stages by such a completely-equipped institute as that at Kabete and that its growth will be gradual. We estimate that the recurrent expenditure of the new central research station, including cost of salaries, maintenance, etc., will not fall short of £25,000 per annum.

Part VI.—Colonial Veterinary Departments. Observations on their Organization and Conditions of Service.

72. Most of the Colonies have Veterinary Departments of varying size. The staff of a department usually consists of a chief veterinary officer, assisted by a fairly large proportion of administrative or field officers, and a small proportion of research officers. In Kenya a chief veterinary officer is in charge of the administrative and executive division and a chief veterinary research officer in charge of the research division. The total number of qualified veterinary officers in the Colonial Services is 127, of whom 112 are field and 15 research officers.

Independence of the Veterinary Department.

73. We note that the Committee appointed by your predecessor, the late Viscount Milner, in 1920, to consider the staffing of the Veterinary Departments in the Colonies and Protectorates recorded* that in nearly all the Colonies and Protectorates the Veterinary Departments were branches of the Agricultural Departments, and recommended that in future veterinary work should be regarded as distinct, and that the veterinary interests of the non-self-governing Dependencies should be entrusted to separate Veterinary Departments. We find, however, that in some of the larger Colonies the Veterinary Department still forms part of another Department, usually the Agricultural Department, and, in the case of Malaya

* *See* Cmd. 922.

the Medical Department. On the question of the independence of the Veterinary Department we were informed that, if the Veterinary Department is not autonomous, veterinary matters may not be properly represented direct to the Government, and that the Department to which the Veterinary Service is ancillary is liable to neglect the veterinary point of view and also starve the Veterinary Service of funds necessary for its advancement. On the other hand, it was suggested to us that, provided the Director of the Department in which the Veterinary Service is incorporated possesses adequate experience and breadth of vision, a joint Veterinary and Agricultural Department, by virtue of the close relationship of these sciences, is a definite advantage.

74. We have considered how far it was possible to define the functions as between Agricultural and Veterinary Departments, and in our opinion no precise definition is possible or desirable. We feel, however, that, whilst the Veterinary Services deal mainly with questions affecting animals in ill-health, any such limitations of its functions would be impossible, and that questions with which the Veterinary and Agricultural Services are equally concerned would have to be examined and dealt with by either or both of the Departments, in accordance with local circumstances and requirements. *We strongly recommend, however, that there should be a separate Veterinary Department under its own professional head in all but the very smallest Colonies.*

Status of the Veterinary Department.

75. We believe that a veterinary officer labours from the start of his career in the Colonial Service under difficulties which his colleagues in other departments do not encounter. He arrives in the Colony to which he is posted inadequately trained, and it is only occasionally that he has the advantage of a short period at headquarters where he may gain some useful experience in the more immediate problems which he will have to solve later. Usually he is posted, soon after arrival, to a district perhaps remote from his headquarters, where he must play a lone hand and assume enormous responsibilities in the control of large areas and the treatment of animals in the mass. His work is usually carried out under the greatest difficulties and, however excellent, its results probably do not mark him out for the recognition which scientific workers in other branches of the Colonial Services may receive. The creation of a unified Veterinary Service which we recommend in Part VII of our Report provides for the veterinary officer of proved ability being adequately rewarded for his work as a member of a scientific department.

XUM

76. The isolated status of the individual officer appears to be reflected in his department, which is not regarded, as it should be, as one of the links in the chain of scientific departments in a Colony. *Despite the great disadvantages to which they have hitherto been subject, we wish to record our admiration for the work which the Colonial Veterinary Services have performed under grave difficulties and adverse conditions. We are convinced that a raising of the general status of the Department is necessary, so that its officers may carry out their duties with the knowledge that they are receiving the full recognition which falls to other scientific workers.*

We feel that the term " Veterinary Department " does not properly describe the duties and functions which its officers are called on to perform. A narrow conception has been taken in the past of veterinary science, *which should include all matters relating to the preservation of the domestic animal in the normal state or in the state of health. Whilst the veterinary officer will primarily be concerned with the sick animal, he must necessarily be interested in all the questions relating to animal health.* We believe that it is possible that in the future veterinary work may become more a matter of directing the care of animals which are healthy to keep them so. Activities in veterinary science in the Colonial Empire cover a far wider and more interesting field than is to be met elsewhere and we fear that the ignorance of the duties performed by an officer in the Colonial Veterinary Services may tend to deter the very type of man which we are anxious to recruit into the Service.

Proposed Colonial Departments of Animal Health.

77. We therefore recommend that the existing title of " Veterinary Department " should be replaced by the title of " Department of Animal Health." We also recommend that a Department of Animal Health in a Colony should include :—

(*a*) *Headquarters* with a Veterinarian Director who should advise the Government on all questions of animal health and control.

(*b*) *Research Staff*, consisting of a Chief Research Officer assisted by veterinary workers with research training, and by such other scientific workers as may be found necessary.

(*c*) *Field Staff*, consisting of District Veterinary Officers whose duties would be chiefly to attempt to suppress contagious diseases and to deal with the health of animals generally.

We appreciate that such an establishment would be beyond the financial powers of the smaller Colonies, but in our judgment such an organization should be aimed at.

Junior Officer as Sole Member of a Veterinary Department.

78. We understand that a junior veterinary officer is sometimes appointed to a Colony as sole representative of its Veterinary Department. We consider that such a course, in the interests both of the Colony to which he is appointed and of the officer himself, is undesirable. The creation of a unified Veterinary Service which we recommend in Part VII of our Report will obviate such a practice.

Study Leave.

79. We are of opinion that the provision of adequate study leave for officers of the Colonial Veterinary Departments is of the utmost importance. It should be a normal condition of an officer's appointment and should be granted regularly after a fixed period of service. Study leave should not involve sacrifice of pay or leave. An officer should be assisted with books and equipment and the staff of his Veterinary Department should be sufficient to allow such leave to be taken without causing inconvenience or a grievous shortage of officers remaining on duty.

There are two broad divisions of study leave :—

(*a*) Refresher courses, which should be taken by the majority of officers.

(*b*) Individual courses of study at a centre or centres where facilities exist for the study of particular problems or particular branches of work.

It is essential that officers should have opportunities of keeping in touch with the latest development of veterinary science, and with other workers. The Adviser on Animal Health, being resident in this country and being in close touch with scientific developments and institutions, has an opportunity, which others abroad cannot have, of knowing what courses of instruction are best suited to individual needs. We therefore recommend that he should be consulted in respect of all officers proceeding on study leave, so that he may have timely notice to arrange for their attendance at any particular course of study.

Part VII.—A Colonial Veterinary Service.

80. The veterinarian of the highest ability will enter the Colonial Services only if he is offered a career sufficiently attractive in pay and prospects to satisfy his ambitions as a scientific worker. His work should not necessarily be limited to any particular Colony : he should, as it were, be on a roster of workers liable to be summoned to any part of the Colonial Empire, to assist by the experience which he has already gained in the solution of a given problem, at the same time increasing his own experience. Colonial Veterinary Departments as at present constituted are to a large extent in watertight compart-

ments. Transfer from the service of one Colony to another is the exception rather than the rule, and an officer posted to a Colony normally expects to remain there throughout his service.

81. As regards salaries, we consider that the initial salary of £600 per annum is adequate and compares favourably with that paid in the other scientific departments. In our opinion salaries obtained during his passage through a " long scale "* (such as those in existence in the Tropical African Colonies and in Malaya) are sufficiently remunerative for an officer of average ability. After reaching the maximum of the scale a few fortunate officers may be appointed to Directorships of Veterinary Departments, *but even so the salary attaching to these posts is in most cases inadequate compensation for the services of a first-class man. An officer of approved ability should not be allowed to remain unrewarded either before reaching or when he has reached the top of his scale of salary. His advancement should not be retarded, but should be accelerated, with adequate financial compensation.* Under the conditions of service as they exist to-day he realises that on reaching the top of the " long scale " the Colonial Service has little more to offer him in pay and prospects.

82. One of the questions considered by the Colonial Office Conference, 1927,† was that of the interchange and transfer of officers in the Colonial Services. Special attention was drawn to the disabilities which arise owing to the fact that there is no single Colonial Service, and the suggestion was made that a single Service should be created for each of the technical services. The Committee which was appointed to frame and submit a scheme for the creation of a Colonial Scientific and Research Service recommended that the principle and creation of such a service should be approved. The Colonial Agricultural Service Organisation Committee recommended in their Report‡ the creation of a unified Agricultural Service, to include a proportion both of specialist and of agricultural officers now serving in the Colonial Agricultural Departments.

We have considered the possible application of this recommendation to the Colonial Veterinary Services and are of opinion that unification is ultimately desirable. In our opinion mutual benefit would accrue between the larger and smaller Colonies. A single Service would tend to blend veterinary work throughout the Colonial Empire by the free interchange of its workers. We have referred in Part VI, paragraph 78, of our Report to the posting of a junior officer to a Colony as the sole member of its Veterinary Department. Obvious difficulties militate against securing the services of a suitable candidate

* or " time scale," i.e. the scale providing continuous increments over a period of 15 to 20 years, subject to efficiency bars at certain points: *see* Appendix II.

† Cmd. 2883, page 17. ‡ Cmd. 3049, page 24.

for such a post. The keen young veterinarian often sees himself side-tracked for life in a Colony with the smallest prospects of promotion or transfer; and so that Veterinary Department is frequently represented by a man of inferior attainments who drifts through his service without giving any material assistance to the development of veterinary science in the Colony to which he has been posted.

83. We consider that it would be distinctly helpful to recruiting if a unified Service could be created at the same time as the arrangements which we have recommended in regard to training and research are carried out. But we recognise that the latter are more urgent than anything else at this moment. We appreciate therefore that the inception of a unified Service may have to be deferred until our other proposals have been carried into effect, but we urge that Colonial Governments should be invited to accept the principle of its ultimate creation.

84. In a unified Service junior officers should receive their initial experience in one of the larger Veterinary Departments. The demands of the smaller Colonies should be met by the posting for a short tour of service of an officer whose experience in the larger Colonies would fit him to take his place as sole representative of the Veterinary Department. Although a junior officer, he would be experienced and therefore able to shoulder great responsibilities; he would be required to exercise his abilities both as an organizer and as an administrator. Whilst the smaller Colony will thus obtain the services of a properly trained officer, the Colony to which he is subsequently transferred will receive an officer who has benefited by the experience of acting as the representative of a Veterinary Department for whose welfare he was entirely responsible.

85. Accordingly we do definitely recommend the creation of a unified Service in which both specialists and field officers should be included, graded in classes at the following scales of salary:—

Class I	£2,000—£50—£3,000
Class II	£1,500—£50—£2,000
Class III	£1,350—£50—£1,500
Class IV	£1,200—£50—£1,350
Class V	£1,000—£50—£1,200
Class VI	£750—£50—£1,000
Class VII	£600—£30—£750

We propose that the salaries should be basic rates, common to the whole Service in whatever Colony the officer is employed. Since, however, a unified Service implies the liability to transfer we propose that local compensation allowances should also be paid in certain Colonies, as was recommended by the Committee of the Colonial Office Conference, 1927, in paragraph 62 (*b*) of their Report,* in order

* Cmd. 2883, page 37.

to safeguard an officer against any direct loss on transfer to a post where conditions are less favourable, e.g. owing to climatic conditions or to the cost of living.

86. In certain Colonies local allowances are already given, e.g. in West Africa and Malaya, and these might serve as a basis upon which a complete system can be evolved. We recommend that the proposed Joint Council should consider this question with a view to the matter being taken up with the Colonial Governments concerned at as early a date as possible.

Finance.

89. We feel sure that those Governments in which the veterinary interest is of paramount importance will be prepared to subscribe to the extra financial burden which our recommendations would entail. It is, however, in those Colonies in which the veterinary interest is not of such importance—Colonies staffed in some cases by a single veterinary officer, in which salaries are usually small, sometimes as low as £375 per annum—that the greatest difficulties in connection with recruitment are experienced. *From the evidence which we have received we are convinced that, if Colonial Governments are not prepared to make veterinary officers eligible to receive the rates of salaries which we recommend, they will be unable to fill their veterinary vacancies with properly qualified candidates.* It should be realised that in those Colonies in which there is a sole member of the Veterinary Department the salary of an officer of the single Service appointed for a tour of duty would probably amount to about £700 per annum. In our opinion the excess over the usual salary paid by the Colony would be amply compensated by the officer's ability, training, and experience, and the reliance which the Colonial Government could place in him. We visualise the possibility of a smaller Colony being suddenly faced with an outbreak of animal disease which it has hitherto not experienced and which seriously affects its prosperity. A single Service places at its disposal scientific workers of the highest ability who could be temporarily employed to deal with the problems connected with the outbreak.

Final Remarks.

90. *In conclusion we confidently trust that Colonial Governments will accept our recommendations as being the only practical solution of the serious difficulties of finding suitable recruits to fill their vacancies, and of steadily raising the scientific standard of veterinarians in the public service in the Colonial Empire. The measures which we have suggested should ultimately build up a scientific Service of highly-trained veterinary workers, capable of dealing with the many problems of animal health which most seriously affect the general welfare and prosperity.*

XUM

Clinical Articles

A Celosomian Monstrosity.

By R. E. ALEXANDER, M.R.C.V.S.,
Weymouth.

I WAS recently summoned to attend a cow suffering from difficult parturition. The owner, when I arrived, told me he had done his best, but that it was "beyond him." As he is a man of some experience, I quickly foresaw that I was due to encounter something interesting.

On exploring the vaginal passage, I met with the head, upside down, and a confusing tangle of legs and feet. All four feet were round the head.

Attaching cords to all four feet, and anxiously sorting out the forelimbs, I pushed the whole mass back into the uterus. Keeping the forelegs well drawn forward, I hopefully sought to push the hind legs back. It was impossible, they were immovable.

I retained sufficient text-book knowledge to know that I had probably struck an anterior presentation of a Celosomian monstrosity, and that the case was rather desperate. The treatment usually advised, viz. to remove the limbs, head, ribs, etc., seemed a formidable undertaking. I finally decided upon traction, and the flower of the local manhood from the village pulled upon the limbs and head collectively.

With surprisingly little pulling, the assembly suddenly came out like a cork out of a bottle. The gentlemen supplying the power, on seeing the entrails exposed, optimistically concluded they had pulled the calf in twain. The monstrosity was standard in every way, with the limbs appearing to sprout from behind the head; numerous duplicate folds of skin, exposed intestines; and it was especially curious to see the uncovered heart beating in the light of day.

As regards the patient, no injury was caused to the passage, as she was a roomy cow. The uterus itself was very flaccid and strained. Recovery was uneventful.

Perhaps it was a case of "fools rushing in where angels fear to tread," but I think if it is possible, traction is superior to an exhausting embryotomy.

Hæmorrhagic Septicæmia in Bovines.

By WILLIAM TWEED, M.R.C.V.S., D.V.S.M.,
Sheffield.

THIS is a disease which has caused some controversy as to whether it occurs to any extent in bovines in this country and whether the

pectoral or exanthematous form is the more common type met with.

In America both types of the disease occur. Bacteriological investigations have been made and in an article by F. S. Jones on the study of *B. Bovi Septicus*[1] he describes a group of similar outbreaks of the pectoral form to those described by Sampson and myself[2] which occurred in a district near Sheffield. The symptoms described by Jones were similar to those seen by us.

Dr. Edington, of the Sheffield University, isolated *B. Bovi Septicus* in pure culture from the lung lesions, but at the time these outbreaks occurred, unfortunately, inoculation experiments into bovine animals with these freshly cultivated organisms was not possible, and he found inoculation of the small laboratory animals was not satisfactory to test their pathogenicity. The difference in the pathogenicity of some strains to infect small laboratory animals was also noted by Jones.[1]

However, it has been arranged that calves or other bovine animals be obtained and inoculated if an outbreak occurs later; these animals to be inoculated with a fresh emulsion of the *B. Bovi Septicus* and others with a filtrate obtained by filtration of the lung juices through a suitable filter. In this way the possibility of a filter-passing organism being the primary cause of the disease could be proved or disproved, whilst the *B. Bovi Septicus* would also be tested for its possible pathogenicity. The fact, however, of a large number of this organism being present and the growth of a pure culture points to *Bac Bovi Septicus* as the possible cause of the disease.

The outbreaks in bovines mentioned above[2] were of the pectoral type and occurred on farms in the same district, but several miles apart. Some of the first animals affected in the herds were animals which had been purchased in markets a short time previously, and had been brought home and stalled in sheds adjacent to animals which subsequently become affected, thus pointing to exposure in markets or journeys from sales being a predisposing cause. The adjacent animals becoming affected points to its infectious nature, although in other outbreaks no such history was available, the disease being entirely sporadic in origin.

The symptoms shown in the pectoral form met with in these cases were rapid breathing, dry painful cough, loss of appetite, high temperature up to 107° F., grunting and a profuse dirty serous and slightly blood-stained nasal discharge which was a characteristic symptom of the disease.

The cases lingered on for a few days with very acute symptoms, and in those which recovered the symptoms gradually subsided into those of pneumonia, with dullness over the affected areas in the lungs.

XUM

bronchial breathing and vesicular rales. The fatal cases died after three or four days' illness.

Post-mortem examination of animals in the acute stages showed lesions very similar and characteristic. The areas of consolidation appeared as bright red coloured areas. This colour was most marked in all the cases.

When an incision was made through the entire lung, the interlobular tissue was found to be very œdematous and swollen, which gave the lungs a lobulated appearance somewhat resembling contagious pleuro-pneumonia.

The consolidated areas were very hæmorrhagic and blood-stained serous fluid exuded from the cut surface. On microscopical examination of this fluid a large number of bipolar bacilli could be seen. In the less acute cases small greyish caseous areas were found in the lungs. The lymph glands of the carcass were congested and petechial hæmorrhages were present on the serous surfaces.

It is hoped if future outbreaks occur that inoculation and vaccination experiments of bovine animals will be carried out.

(1) *Journal of Experimental Medicine*, Vol. xxxiv., pp. 561-577.
(2) V.R. No. 12. Vol. viii., p. 235.

Laparotomy Through the Inferior Abdominal Wall in a Fifteen Months Old Bovine.

By O. STINSON, M.R.C.V.S.,
Appleby.

SOME weeks ago I was requested to attend a bullock late at night. It had been castrated by the farmer during the afternoon of that day, as he had decided that the animal was not good enough for stud purposes. He was 15 months old and big for his age. On arriving at the farm I found that he was tied up by the legs and on his back, being held there by half a dozen men. An enormous mass of œdematous bowels was in evidence resting on the abdomen. They were cold and almost black—not to mention the filthy condition. It was evident that it would be impossible to return them to the abdomen, as only two fingers could be introduced through the internal inguinal ring; nevertheless, the ring was enlarged in the forward direction. This, it was plain to see, could not help things further. The possibility of getting the intestines back if they could be gently pulled in from the inside with assistance from the outside was considered. Laparotomy was performed, the patient from the beginning being under deep chloroform anæsthesia. The incision was a little to that particular side of the middle line, and extended forward from about 2½ inches

in front of the inguinal ring incision, for about 8 inches. The left arm was introduced into the abdomen through this incision, and the intestines were finally got into the abdominal cavity by traction with the left hand from the inside and by careful assistance from the outside by the right. The internal ring was sutured with "continuous" sutures, as also was the parietal peritoneum and other structures, except the skin of the incision further forward. Very strong and thick silk was used. Two rows of sutures were put into the scrotum of the interrupted type, as well as in the skin of the abdominal wall incision.

Careful dieting was ordered, and no further treatment adopted other than giving an aperient and taking out the superficial sutures. A quantity of blood was passed with the fæces for a few days. It was a fortnight before the bullock really showed definite signs of recovery, but he has been normal now for several weeks.

The most interesting feature in this case, and the reason for reporting it, is the fact that a laparotomy through the inferior abdominal wall is possible in a bovine of the age of this subject.

Grass-Ill in Cattle.

By WM. T. HEWETSON, M.R.C.V.S.,
Brampton, Cumberland.

GENERAL.—Grass-ill in cattle may be defined as an acute or sub-acute disease, affecting principally young cattle from 12 months to three years old, characterised by partial or complete paralysis of the intestinal tract, by constipation and by great prostration. It frequently occurs among Irish cattle in the early spring shortly after they are released from quarantine. Irish cattle may be predisposed to the complaint since their livers are often affected with cirrhosis; it also occurs in Shorthorns, but seldom in Galloway cattle.

The disease is met with in the early spring when the weather is cold and wet, and when the wind is from the east or north. The animals are more subject when they are out of their hair and exposed to the above conditions with little or no shelter. Generally speaking, the symptoms in cattle are somewhat similar to those observed in the same disease in the horse and acute and sub-acute forms are recognised.

SYMPTOMS.—Acute form. The animal appears fuller than normal, looks dull and is listless. There is little or no appetite, rumination is suspended, and saliva drops from the mouth. There is evidence of constipation, and on introducing the fingers into the rectum, this organ is found to be empty and dry. At this time, however, a small ball of mucous may be passed. The temperature varies from sub-

normal to as high as 105° F., but the extremities are often found to be cold. To an ordinary observer the patient may not at first appear to be seriously ill, since the breathing at the outset is practically normal, there is no grunt and the eye is full and bright. Later on a moan develops with each breath, the eye sinks in the orbit, and the extremities and inside of the mouth become deathly cold. Grinding of the teeth and muscular tremors are frequently observed at this stage. Should the subject be a milk cow, the first symptom will be a great decrease in the milk yield. The acute form often proves fatal as the bowels are generally completely paralysed, purgatives and stimulants have no effect, and consequently the animal dies from auto-intoxication within a few days. If the bowels respond to medicine, as they occasionally do, with careful and diligent treatment, a cure may be effected.

SUB-ACUTE FORM.—In this form the animal is not found to be so full, but on the contrary is tucked up in the flanks. It may be found lying or standing off by itself, is dull, listless, and the eyes may be half closed, except when the attention is attracted, when the eye appears bright and full. The internal temperature varies, and may be as high as 106° F. So does the external temperature. Sometimes the animal feels comfortable all over, but at other times the legs and ears are cold. This variation continues throughout the course of the disease. Saliva drops continually from commissures of the mouth, despite the fact that examination reveals nothing abnormal in the mouth. Grinding of the teeth and rigors of the hip muscles are common symptoms. The breathing may be normal or somewhat catchy. The fæces are passed less frequently and in small amounts, are abnormally liquid and often contain mucus. In other cases the mucus is passed in large quantities either mixed with the fæces or as pure slime, and it may contain streaks of blood. Staggers, delirium, coma or paralysis of the limbs are not met with in this disease.

POST-MORTEM.—The lesions found immediately after death resemble yew poisoning. The contents of the rumen are soft and moist, as also the contents of the third stomach. There is no evidence of drying, the ingesta between the folds being moist. The fourth stomach contains liquid.

The mucous membrane of the rumen is readily stripped off leaving a congested surface beneath. A considerable amount of mucous membrane is found adhering, or mixed with the rumen contents, and there are often strips of mucous membrane hanging like ribbons to the wall of the rumen. There is congestion of the mucous surface of the fourth stomach, and there may be petechial hæmorrhages. The congestion is continued for some distance into the small bowel.

Macroscopically the glands do not appear to be involved. All the other organs appear to be healthy.

TREATMENT.—The animal must be placed in a comfortable loose box, and bedded with moss litter or sawdust, and on no account with straw or bedding it can eat. It must be covered with suitable clothing, and it is important that the clothing be properly tied or sewn on, to prevent it slipping off. The primary object is to purge the animal, and practitioners will no doubt differ in their methods to accomplish this. It has been found that, particularly in regard to choice of medicines, dosage, etc., no precise rules can be laid down as all cases cannot be treated alike. In the first place a moderate dose of magnesium sulphate or sodium sulph. and ginger or gentian, sweetened with treacle is administered. This is followed by ammonium carbonate ℥i, soda bicarbonate ℥i, and pulv. nux vomica ℥i, given in a quart of water twice daily.

As the bowels act irregularly it is necessary to give treacle twice a day, one, two or three pounds being used according to the size of the animal, and the condition of the bowels. The animal must not be purged drastically, but it is essential that the bowels are moved regularly throughout the course of the disease. If the animal is in a very bad state when first observed, it may succumb to the first dose of medicine, being due probably, to the medicine causing the liquid ingesta to be driven from the rumen into the abomasum and small bowel, resulting in absorption and death from auto-intoxication. On the other hand, if the animal can stand the first dose of medicine, there is good hopes for its recovery.

Linseed oil can be substituted for treacle, but it has the effect of destroying the appetite in animals that were previously taking soft food. Further, linseed oil has not the laxative effect on ruminants such as treacle possesses. During the course of treatment the animal at times will appear slightly tympanitic, an effect which may be due to the treacle given.

Hyposulphite of soda has been tried, but it does not appear to give any better results than soda bicarbonate. If mucus is passed in large quantities and especially if the animal is inclined to be purged, magnesium silicate (white bole) can be given with benefit. This is used once per day until the diarrhœa ceases. Some cases benefit by giving an occasional dose of a disinfectant, and other cases, particularly in the later stages, benefit from a few daily doses of nitro-hydrochloric acid dil. Should the patient pass blood in the fæces, linseed oil and chlorodyne is given twice daily until the dysentery stops. Thus, it will be evident that all cases cannot be treated exactly alike, but all must to a large extent, be treated medicinally according to the symptoms manifest.

As Regards Diet.—Every patient must receive liquid or semi-liquid food only. All grass and dry food must be withheld strictly until all the symptoms of the disease have passed, such as dribbling of saliva and temperature changes, and until the fæces are normal in consistency and free from mucus. It is very important that the patient is not allowed to eat grass too soon. If grass is given, all the symptoms of the disease will reappear, and the animal will be worse than at the commencement. It generally takes about three weeks to bring about recovery ; sometimes a week or two longer.

When returning the animal to grass feed, allow only a small quantity the first time, and watch closely for 24 hours before giving more. If there are no ill effects, bring it on to its normal diet gradually. The food given during treatment consists of scalded bran, boiled linseed or linseed meal, calf meal, milk or any cooked or easily digested food.

Discussion.—In my opinion the disease is caused by a poison generated in the stomachs by the ingesta being retained too long, and to paralysis caused by the extreme cold to which the animal has become exposed when out of its hair. The cold under these conditions may also have an adverse effect on the whole glandular system of the animal and so alter or change the glandular secretions to such an extent that they do not function properly in the process of digestion. Consequently, a chemical or biochemical poison is able to form in the stomachs and intestines, which upon absorption, gives rise to the trouble. Thus, it may be, that the sequence of events is materially assisted by the partial paralysis of the intestinal tract, since it results in retention of the ingesta which undergo decomposition. The clinical picture certainly suggests that a poisonous substance has been absorbed, probably from the stomach and intestines, as witnessed by the high fever, the sickly appearance and the degree of prostration. If the above reasoning is correct, it is obvious that rational treatment must be directed to the elimination of the poison from the system and from the alimentary tract, and the success which the treatment has met enables one to think that the foregoing hypothesis is correct.

Railroad Disease.

By W. R. DAVIS, M.R.C.V.S.

Five cows out of a mob of cattle delivered during the night at a large freezing works in New Zealand (the train runs into the works) were discovered on the following morning to be ill, and one cow was lying dead in the pen. Two of the patients were lying on the side, tympanitic, skin cold, unconscious, the cheeks puffed out at each expiration. These were immediately slaughtered. Of the other

three cows, one was on her feet staggering about the pen, the hocks extended and with the peculiar stiff gait observed in milk fever. The remaining two cows were on the ground, but on our entry into the pen, they struggled with difficulty on to their feet and blundering about, were soon down again. A marked improvement resulted from the inflation of the udders—sufficient to get the patients to the slaughter pen. The mob of cattle had been trucked from a considerable distance, had fasted long, and being "station" cows, had lived entirely at pasture. Each had borne several calves brought up as running suckers, the dams never being milked. The patients were all in good condition; the udders, however, were small (all were dry), and dilated but little on inflation. No gross lesions were observed *post-mortem*. It is generally asserted that tuberculosis is almost unknown among New Zealand cattle. This, however, is far from being the case. Dairy cows sent for slaughter to the abattoirs and to the freezing works quite frequently display tuberculous lesions. For the past 30 years a procedure very similar to the operation of our Tuberculosis Order has been in action. Suspected cases have been seized and compensation paid. Very large sums of money have been expended with little or no effect on the incidence of bovine tubercle. Pigs, too, are not infrequently found to be the subject of the malady; very frequently the submaxillary lymphatic gland alone being affected.

Ergotism.

By H. P. HAMILTON, B.V.Sc.,
Toronto, Canada.

ERGOTISM is defined by Dorland as being a "chronic poisoning from excessive or misdirected use of ergot as a medicine or from eating ergotised grain." *Claviceps purpurea*, or the essential element of ergot, possesses the ability to contract the arterioles and unstriped muscle fibres, and it is a powerful ecbolic and hæmostatic.

Barger and Carr* in 1907, isolated an alkaloid, ergotoxine, from the fungus and it is thought that this alkaloid does not form more than 0·1 per cent. of the drug. It would therefore appear that an appreciable quantity of ergot must be ingested before disturbing clinical symptoms manifest themselves.

The report of W. Watson, in *Veterinarian* of 1859, page 574, states that it is a "popular belief that cows, grazing in a field containing ergotised grasses, aborted their calves," but according to Sir Frederick Smith's article in *Hygiene*, 1905, page 170, sheep and cows have been fed on quantities of ergot without dangerous effects.

* Transactions of the Chemical Society, 1907, p. 337.

The researches of Kaufman show that although very great doses would be required to induce acute poisoning, prolonged administration of small doses causes chronic ergotism, when besides gastro-intestinal irritation, coldness, anæsthesia, and dry gangrene of the feet, ears and tail, or comb tongue and beak in birds, ensue. The parts drop off without pain, and the disease closely resembles ergotism in man, death resulting from asthenia. He goes on to refer to the *post-mortem* appearances which he describes as being inflammation of the gastro-intestinal tract, flaccid and soft viscera, gelatinous muscles, dark blood, and injected mucous membranes of the organs.

Some authorities state that the toxic extraction of ergot acts on the nervous system, depressing the heart action and thereby restricting the blood circulation. In advanced cases the ears, tail and lower parts of the limbs of the affected animals lose warmth and sensibility, dry gangrene sets in, and the diseased parts finally slough away. (Henry and Morrison's "Feeds and Feeding," 1921, paragraph 396.)

There may be necrosis of the skin following the continuous eating of ergot where the extremities, ears, tail, combs and wattles of fowls as well as the tips of their tongues, and the bills of ducks, because of the insufficient supply of blood through the constricted arteries, become gangrenous and are sloughed off. (Hutyra and Marek, 1926, Vol. III, page 622.)

The authorities quoted above appear to insist that the effects on the animal body through prolonged ingestion of ergot are (1) dry gangrene produced by the contraction of the arterial blood vessels and (2) gastro-intestinal irritation and inflammation.

The fact that the tail, the hind feet and conchal cartilages of the ears become gangrenous shows that the arteries farthest removed from the heart suffer to the greatest extent, and that parts are most affected where colateral circulation is not possible.

The fact that ergotism frequently produces abortion appears to lie in the fact that the blood to the fœtus is lessened by contraction of the middle uterine artery. It appears strange, however, that this branch of the external iliac artery is so much more affected than its fellow branch, viz. the circumflex iliac, by the action of ergotoxine, but this anomaly can doubtless be explained by the fact that during pregnancy the walls of this particular artery hypertrophy to allow the greater demand for blood to be realised; and as the walls are not completely normal under these conditions, it is possible that the drug has a greater effect on the nerves responsible for the contraction of this artery.

In a case presented at the College Hospital on January 13th, 1927, the autopsy revealed a well-formed fœtus which would, in all

probability, have been born normally had the cow been allowed to live. There appeared to be no reduction in the size of the middle uterine artery or the placental coteledons. The fœtus was in the sixth month of pregnancy and so was well advanced, which fact shows that ergotism may only have a fatal effect on fœtal life if it has been ingested either before pregnancy occurred, or during very early fœtal existence, i.e. before an increased blood supply to the fœtus had been demanded.

In the case under consideration there were no *post-mortem* symptoms of gastro-intestinal irritation or inflammation which are usually seen in cases of ergotism according to Continental authorities such as Kaufman.

It must be remembered that there are no cases which manifest all the symptoms of the condition at one and the same time, and it is therefore necessary to formulate one's diagnosis on the most prominent symptoms present. Having before us the dry gangrene of the distal extremities of the hind limbs, together with that of both the conchal cartilages and of the caudal extremity, anæmic mucous membranes, quick pulse and hurried respirations which are indicative of the ingestion of toxic substances, we would be justified in attributing the cause of the symptoms presented to ergotism.

Pseudo-Leucæmia in the Dog.

By H. R. HEWETSON, M.R.C.V.S.,
Southport.

CASES of leucæmia and pseudo-leucæmia appear, so far as I have been able to ascertain, to be of very rare occurrence in this country. Whether this is a real state of affairs or whether it is because few are recorded or many escape observation, I am unable to state. Two cases which I have regarded as pseudo-leucæmia have come under my treatment within the last 18 months and have caused me no little dissatisfaction.

Two factors stand out which are not likely to enhance the practitioner's reputation in cases of this nature: (1) the difficulty of establishing a positive diagnosis, and (2) his apparent helplessness to combat what at first appears only a simple affection, but which over an extended period becomes progressively worse.

The first case which came under my attention was a Scotch terrier bitch, aged two years and nine months, and when I first saw her she had a slight cold and both sub-maxillary glands were a little enlarged. I took these to be associated with the cold and treated them as such, but when, in about a fortnight's time, they were rather

larger, I began to look more closely for the cause. I found that there were also two very small swellings in the pharyngeal region, and during the course of the next two weeks these were followed by pains in the axilla and inguinal regions.

These symptoms to me pointed to four alternative diagnoses: (1) leucæmia, (2) pseudo-leucæmia or Hodgkin's disease, (3) lympho-sarcoma, (4) tuberculosis, and from the clinical evidence I was inclined to favour (2) Hodgkin's disease as the most likely.

The various authorities do not help us much in the clinical differential diagnosis and contrary opinions seem to be held as to alternative symptoms, but the more general trend seemed to indicate that where the swellings remained freely mobile it should be regarded as Hodgkin's disease, whereas in leucæmia they became more or less rigidly attached to the surrounding tissues.

A definite diagnosis was required, however—though it was not likely to have much practical value when obtained—and accordingly an examination of the blood was made.

I confess that my examination of the blood did not give me the definite results I desired, and so I sent away a sample for laboratory test. Here again I was disappointed. The report came to the effect that it was either (*a*) Hodgkin's disease, (*b*) malignant growth, or (*c*) tuberculosis and my client was naturally not very impressed. Tuberculosis was eliminated (?) by the tuberculin test, and as no evidence of any internal swelling or growth was to be found, I adhered to my original opinion of Hodgkin's disease.

The course of the illness is worth recording, since it differs slightly from the various descriptions I have encountered.

For about three months the bitch remained in excellent apparent health and condition, apart from the obvious swellings, and the appetite was good, but there were occasional attacks of choking due to the pressure of the glands in the throat. At the end of this period she grew more lethargic and experienced a difficulty in taking food unless it was made very small or soft, but the desire for it remained. The membranes became very pale, but it was not for a further two months that her condition began to become poor or any excessive thirst arose. At this time, though, five months from the onset, the disease made much more rapid strides, and in about three weeks emaciation was extreme, choking attacks were frequent and the glands enormously enlarged. Even now the appetite was good and any amount of food would be taken provided it was small or soft enough to be swallowed. The bowel actions remained regular throughout. In response to my insistent advice she was destroyed, the course having run just about six months, but a *post-mortem* was denied.

So little appears to be known of the etiology that no rational treatment could be carried out, and a definite diagnosis was never really established. The various works on veterinary medicine give little real indication, other than the inevitable arsenic and iron. White, in his book " Principles and Practice of Veterinary Medicine," goes so far as to say of leucæmia : " Treatment in animals should not be attempted as it will not lead to success," and of pseudo-leucæmia : " In man, iron, arsenic, iodine and the X-ray are used to prolong life." His first statement may be sound in theory, but to tell a client whose dog appears well except for a few swellings that he is powerless to assist and that no treatment should be attempted is an action to which no sane practitioner could agree. True, we can advise that a cure is almost certainly out of the question, and that no treatment is known which can be shown conclusively to even modify the course of the disease, yet the client must feel that the best, even if a hopeless best, is being done for the patient. In this case a highly nutritive diet was prescribed, comprising chiefly meat, fish and green vegetables and all unnecessary packing withheld. After about two months three ounces of raw calves' liver was given daily, and it appeared temporarily that with this addition a very slight amelioration took place. Hæmoglobin and arsenic were pushed to their limit, and for a time the arsenic was given in the form of sodium cacodylate. Acting on the suggestion of iodine, " Iodalbin " (P.,D. & Co.) was tried, but though persevered with until she literally smelled of iodine, no improvement was noticed. X-ray was objected to and was accordingly not unduly pressed.

I am satisfied that it is correct to say that, with the possible exception of a slight temporary improvement following the raw liver at first, the disease progressed steadily, slowly and unchecked to its conclusion, and I would hesitate to claim that any one of the treatments had any effect whatever in either retarding or accelerating its course from start to finish. So much for case number one.

Case number two, a cairn terrier dog six years old, is now under observation, and it is about a month since I first saw it and two months since its owner noticed the first symptoms. The sub-maxillary, pharyngeal, axillary and inguinal glands are all affected, the membranes are pale, choking symptoms are evidenced and the appetite, though not very good, is said to be normal and he is in good condition and spirits. Though fully agreeing to the medical value of blood tests, hypodermic injections, etc., the owner is unwilling to allow their employment in the case of her dog unless some fairly definite promise of successful treatment will be forthcoming therefrom, and so, for practical purposes, they are unfortunately eliminated.

In view of the experience in the first case, liver was immediately prescribed again and at the end of the first week he appeared to show some slight improvement, but this has not been maintained. Since empiricism seems to be the order of the day " Radiostol " has been given since the onset and has so far shown no benefit. The next step is to go wholeheartedly on with the liver treatment on the lines now generally adopted in cases of anæmia in the human subject. The difficulty will apparently lie in the somewhat unwieldy extract administration with the associated adjuvants.

Though in ordinary practice I dislike adopting treatments for which no rationale can be shown, these are cases in which I suppose we have to admit to purely empiric formulæ and I would be very grateful if anyone can suggest any line of treatment which is known to have even modified in a favourable manner, either of the conditions in any way.

Since writing the above, I have had consultations with a doctor who specialises in X-ray therapy, and a start has been made with deep X-ray treatment. The results so far are promising, but a further report will be withheld until after a more extensive trial.

Foreign Bodies in the Rectum. Two Peculiar Cases in Dogs.

By PROFESSOR G. H. WOOLDRIDGE, F.R.C.V.S., and MR. J. W. H. HOLMES, M.R.C.V.S.,
Royal Veterinary College, London.

THE following cases show what remarkable things can pass through a dog's alimentary canal, and they also stress the importance of a rectal examination.

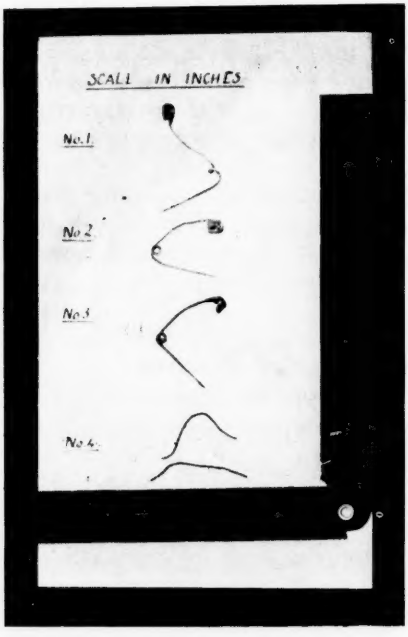
CASE 1.—On the afternoon of October 17th, 1928, a wire-haired fox-terrier dog was brought to the college, with the history that since the previous evening he had been making constant painful attempts to defæcate. There was a further history of the animal having been previously treated for distemper.

On observation the animal appeared quite bright, and showed no discharge from eyes or nose. Anal gland trouble was suspected, and these were examined, found to be slightly enlarged, and were expressed. Not being quite satisfied that the cause of the trouble had been found, a rectal examination was made. This proved interesting, for it revealed a foreign body, which on removal proved to be an open and badly bent safety pin. (No. 1 in photo.)

Thinking the mucous membrane of the bowel might be injured,

liquid diet was advised for a few days and medicine containing Bis. Carb. and Salol was given.

No sequelæ developed, and the dog was not seen again until December 11th, when he was brought along at 8.30 p.m., this time with the history that he had been seen to swallow another safety pin the previous evening, and that during the last two or three hours he had been making painful attempts to defæcate, as on the previous occasion.



The animal appeared quite bright. A rectal examination was made and the open pin (No. 2 in photo.) removed. It lay in the rectum with the hinged end posteriorally.

The after treatment was as before and with like result.

On January 7th the dog was again brought to the college and another safety pin removed. This pin (No. 3 in photo.) was open and bent, as before.

A point of interest physiologically is that the second and third pins took about 24 hours to reach the rectum.

Case 2.—On November 19th, 1928, an owner brought a three-months-old Alsatian male puppy to the college, asking for worm medicine for same.

The pup appeared quite bright, but a slight discharge from the eyes led one to take the temperature. On inserting the thermometer into the rectum it came into contact with "something" abnormal, and as a result a rectal examination was made, and two pieces of bent wire (No. 4 in photo) were removed.

The after treatment and result were the same as in Case 1.

Translation

Paræsthesia in a Horse.*

By DR. FREDERICK GENOCH,

Assistant in the Surgical Clinic at the Veterinary School in Vienna.

On March 18th, 1925, a black cart horse, nine years old, 173 c.m. high, was brought into the surgical clinic. The horse belonged to my brother in Esslingen, near Vienna, where for four years it had been worked on his farm, had been healthy, in good condition, and was recognised as a good draft horse.

On March 15th, 1925, the stable attendant noticed at the first feed that during eating the horse stamped continuously with the near hind foot. On this day I examined the animal and noticed the following: The apparently healthy horse (pulse, respirations, temperature normal, as well as the taking of food and drink) stamped when it stood in the stall with the left hind foot at intervals of 10 to 20 minutes and did this in series of 10 to 30 consecutive strikes. This stamping occurred as follows: The horse stood quite quiet for a time, then suddenly lifted the leg up high (the movement was similar to that of stringhalt), so that the foot was bent up to the maximal and then thrust down again with considerable force. Immediately afterwards he stamped out 10 to 30 times on the ground, the strokes being successively weaker. He then stood quiet again for a few minutes and afterwards started the same sort of stamping again without any external cause for it being ascertainable. When asked to move over either way the horse ceased stamping, as also when being harnessed or yoked. When walking or at work he was normal.

On examination nothing could be noticed in the limb. On palpation the horse showed nothing from the hoof half way up the metatarsus, but above that he resented and stamped on the ground. To lift up the left hind leg was impossible, even with powerful help.

On March 18th he came into the clinic. In order to make a fresh local examination the horse was cast. Although hobbled he became quite unruly on slight handling of the limb above the upper half of the metatarsus. On touching with a needle or puncturing the horse showed remarkable susceptibility (hyperæsthesia), so that this had to be done very warily as the reactions were quick as lightning. After marking out several areas and the injection of a strong novocain solution over both plantar nerves the horse could be examined quietly. No changes could be found. Hair and scales taken away from the

* *Wiener Tierarzt Morinatsschrift*, Nov. 20, 1928.

fetlock region and examined for dermatophagus mites gave negative results. The limb was now thoroughly brushed with creolin solution. About half an hour afterwards, after the effect of the novocain had passed, the horse showed the old symptoms.

Further, the horse was rectally examined for thrombosis, but no changes could be found in the aorta, or hypogastric and iliac arteries.

On March 20th the horse was discharged as not cured and again put to work on the land. He remained under my observation and I noticed that the ailment grew worse. The previously good condition became slowly but constantly worse, although the appetite was good. The single pauses between the stamping movements became shorter and the stamping more violent. These stamping movements now occurred at work, the horse pulled up suddenly and began stamping. The horse when standing also often tried to gnaw at his left hind foot and drew it spasmodically away and made a series of stamps on the ground.

On April 27th he came into the clinic again and the owner wished him to be destroyed, but I persuaded him to carry on as the case was of great interest to me.

He was later turned out to grass, and towards the end of May the condition having improved, was put to light work again. On June 2nd he had infectious pleurisy and pneumonia (Brust-Seuche) and was treated with neo-salvarsan and on June 14th was well again. During this illness the disease of the limb improved, due probably to the salvarsan (a view modified or annulled later on), and in a further three weeks the stamping movements disappeared entirely. By the middle of July he was again in good condition and as good a draft horse as previously.

On November 30th the horse stumbled at work and could hardly be brought back to the stable. At midday he refused food and showed slight colic. Rectal examination showed impaction of the large colon. This was treated with aloes and arecolin and enemas. On examination per rectum with my arm in up to the shoulder I could just feel a nobbly tumour about the size of a man's head. It was slightly movable forward, but not to left or right, and appeared fast in the region of the vertebræ. The animal was slaughtered.

Post-Mortem.

In the region of the left kidney was a hard nobbly tumour which was fixed by hard connective tissue fibres to the iliac fascia and the loin muscles and to the region from the 16th dorsal vertebra to the beginning of the os sacrum. Its weight was 27 lbs. It had a connective tissue capsule of 10 to 12 centimetres in thickness. On section it was

greyish red in colour with light yellow masses superimposed. The tumour mass went gradually off into apparently normal kidney tissue.

HISTOLOGICALLY.—Sarcomatosis of the left kidney.

Remarks.

The tumour was in contact with the nerves of the lumbosacral plexus. The ischiatic plexus springs from the last nerve of the loins and the first two or three transverse nerves. Its direct continuance forms the ischiatic nerve, which divides up into the nervus peronæus and nervus tibialis. The medial and lateral ramus of the nervus peronæus as well as both plantar nerves of the nervus tibialis serve the skin from the metatarsus downwards.

At the beginning, through pressure or drag of the tumour on the nerves of the lumbar plexus, especially the ischiatic, there was persistent irritation of the skin nerves mentioned, which accounted for the paræsthesia and the cause of the stamping.

The betterment in July was due to destruction of nerve conductivity through advancing destructive process and ability to raise and manipulate the limb at this time without pain also pointed to the destruction of nerve conductivity.

Abstracts of Current Literature

Carlin, J.—Gastrotomy in the Guinea Fowl.—*Arch. f. wiss. u. prakt Tierheilkd. BD* 56. H 5, S 436-438.

A PERFORMING guinea-fowl had swallowed a valuable ear-ring belonging to an actress. Röntgen rays showed that the trinket was lying in the gizzard. Operation under ether narcosis. A long incision of 6 cm. was made 2 cm. from the middle line, beginning close behind the last rib. A funnel-shaped incision to the right under the edge of the drawn-out gizzard. The pearl of the ear-ring was found diminished in size by one half after clearing out the gizzard contents. It had been there two days. Suture of mucosa, muscle, and skin mastisol bandage. Healing per primam after five days.

L. Hugonneng, A. Morel, and A. Jung.—The Toxicity of Alkaline Sewage.—*Annales d'Hygiene*, Jan., 1928, p. 43.

ATTENTION has often been drawn to the danger of allowing water to flow into rivers, when such water contains free acids or toxic substances such as salts of lead, copper, zinc, arsenic, etc.

In 1926 a large reservoir of caustic soda solution was emptied into

the River Meurthe, and the fish were destroyed up to a distance of 15 kilometres (about 10 miles).

In the present case the water of a small river was polluted by water discharged from a factory for the stripping of galvanised iron, the process adopted being the passing of an electric current through vessels containing 6 or 7 per cent. caustic soda solution. The waste water contained caustic soda, sodium carbonate, sodium stannate, and a small quantity of tin partly in the colloidal state.

Experiments have shown that solutions of the same composition are highly toxic for fish; moreover, ruminants (goats and cows) which drink it show digestive trouble with intense diarrhœa.

It is to be noted that accidents occur even with only slightly alkaline waters comparable in alkalinity to some of the mineral waters tolerated by man. This indicates that great care is necessary to completely neutralise all waste before allowing to flow into rivers.

News

Gift of £5,000 to the Royal Veterinary College Fund.

On Saturday evening, February 2nd, Messrs. Spratts, Ltd., held their annual dinner and dance, and a company of about 600 employees and friends spent a most enjoyable evening at the Great Central Hotel, Marylebone.

The occasion was taken advantage of to present Professor Hobday, the Principal of the Royal Veterinary College, with a cheque for £5,000 as a preliminary to the fulfilment of the promise made by Mr. Lethbridge, the Managing Director (on behalf of his co-directors) that Spratts, Limited, would raise the minimum sum of £20,000, in order to establish a Chair of Canine Medicine and Surgery, to be devoted to research into canine diseases.

In handing over the cheque Mr. Lethbridge spoke of the good work which the College was doing under difficult circumstances and wished the Rebuilding Scheme the best of good luck. Principal Hobday, in a few words of suitable acknowledgment, spoke of the great courtesy and encouragement which Mr. Lethbridge had shown towards the College plans, and the stupendous amount of work which had been put into the National Dog Week campaign by Capt. Hobbs and his staff of workers, the proceeds of which, too, were to be devoted, this year, to the College Funds.

University of London. Register of Boards of Studies for 1929.

VETERINARY SCIENCE.

(*a*) *Teachers of the University.*

Bulloch, Prof. William, M.D., C.M., LL.D., F.R.S. London Hospital, E.1.	*Lond. H.M.C.*
Cave, Prof. Thomas William, F.R.C.V.S. South-Eastern Agricultural College, Wye, Kent.	*S.E.Agr.C.*
Clough, George William, D.Sc. Royal Veterinary College, Camden Town, N.W.1.	*R.Vet.C.*
Evans, Thomas James, M.A. Guy's Hospital Medical School, S.E.1.	*Guy's H.M.S. & R.Vet.C.*
Hare, Tom, M.D., Ch.B., B.V.Sc., M.R.C.V.S. Department of Pathology, Royal Veterinary College, Camden Town, N.W.1.	*R.Vet.C.*
Roaf, Prof. Herbert Eldon, D.Sc., M.D., L.R.C.P., F.R.C.S. 8, Arkwright Road, Hampstead, N.W.3.	*Lond. H.M.C.*
Symes, William Legge, M.R.C.S. Oakley, 39, Manor Road, Teddington, Middlesex.	*St. Thos. H.M.S. & R.Vet.C.*
Wallace, Sir Cuthbert Sidney, K.C.M.G., C.B., M.B., L.R.C.P., F.R.C.S. 26, Upper Wimpole Street, W.1.	*St. Thos. H.M.S.*
Willcox, Sir William Henry, K.C.I.E., C.B., C.M.G., M.D., B.Sc., F.R.C.P., F.I.C., F.C.S., D.P.H. 40, Welbeck Street, W.1.	*St. My's H.M.S.*
Wooldridge, George Henry, F.R.C.V.S. Royal Veterinary College, Camden Town, N.W.1.	*R.Vet.C.*

(*b*) *Other Persons.*

Hobday, Frederick Thomas George, C.M.G., F.R.C.V.S., F.R.S.E. Principal, Royal Veterinary College, Camden Town, N.W.1.

McFadyean, Prof. Sir John, LL.D., C.M., M.B., B.Sc., M.R.C.V.S., F.R.S.E. Highlands House, Leatherhead.

Moore, Maj.-Gen. Sir John, K.C.M.G., C.B., F.R.C.V.S. 16, Frognal Lane, Hampstead, N.W.3.

University of London Animal Welfare Society.

AT a meeting of the University of London Animal Welfare Society held on November 21st, 1928, the following resolution, proposed by Captain Robinson, seconded by Mr. Fitzgerald, was carried unanimously :—

" Recognising the valuable work carried on by the R.V.C. in connection with the health of animals, this Society supports the R.V.C. and will co-operate in the common endeavour of furthering this definite aim. For the time being U.L.A.W.S. desires that any financial support which the Society may be instrumental in raising should be devoted to clinical work."

Notice

Where to Obtain the Anti-Distemper Vaccine.

An important report submitted by the Distemper Research Committee to the *Field* Distemper Council and the Medical Research Council appeared in the Press on November 29th. It states that the Committee's investigation has reached a point when the knowledge acquired is capable of being usefully applied in practice to rendering dogs resistant to infection by distemper.

The report adds that with the object of providing dog-owners with the means of preventive treatment they have invited a laboratory well equipped for the commercial development of these results to undertake the preparations of the vaccine used with a view to its distribution.

As is only to be expected when a scientific announcement of such importance is made great interest has been aroused amongst owners of dogs, and numerous inquiries made as to where the vaccine can be obtained. It is deemed advisable, therefore, to inform inquirers and others interested that The Wellcome Foundation are actively engaged in undertaking the conversion of the experimental laboratory processes into large-scale production, and in due course hope to be able to issue the vaccine through Messrs. Burroughs Wellcome & Co.

Personal

Mr. Edgar Messervy, M.R.C.V.S., has been appointed by the Secretary of State for the Colonies as Veterinary Officer in Tanganyika Territory.

Mr. T. D. Lloyd-Jones, M.R.C.V.S., D.V.S.M., has been appointed Veterinary Officer to the Government of Nigeria.

Errata

In the paper " A possible means of selection for non-deformity breeding in Dexter cattle " by Walter Landauer in the January issue of this Journal, several errors occured in the list of references. The paper by Landauer and Thigpen has been published in *Folia Hæmatologica*, Vol. XXXVII, 1928/29. The paper by Mohr has appeared in Vol. XLI, 1926, of the periodical referred to. The following title, giving the most recent report upon differential counts of the leucocytes of cattle, should be added to the literature list, Kuhl, P., Das Blut der Haustiere mit neueren Methoden untersucht. I Untersuchung des Pferde. *Rinder-Physiologie*, Vol. CLXXVI, 1919

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